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Methods in Premodern Economic History

Case studies from the Holy Roman Empire, c.1300–c.1600

Edited by
Ulla Kypta · Julia Bruch
Tanja Skambraks

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Introductory Remarks

Julia Bruch, Ulla Kypta, and Tanja Skambraks

This book is aimed at students and researchers of history and economics alike. It provides a concise overview of current approaches, methods and sources in premodern economic history, focusing on the time between c. 1300 and c. 1600. To demonstrate how research in premodern economic history can be done in practice, we present sample studies that analyse different economic aspects of the Holy Roman Empire. Studies on this large area still need to be connected to the grand narratives of premodern economic history, like the rise of the West, the industrious revolution, or

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the evolution of a market economy. In sum, our book has a twofold objective: We want to provide an access to methods and sources for studying premodern economic history as well as give an insight into recent studies of the German premodern economy, thereby paving the path to reconnecting German premodern economic history with the grand narratives that have been developed mainly for Western European regions, like Italy, Flanders, France and England.

The premodern economy is one of the most fascinating and most challenging subjects of study: Analysing it includes the study of history as well as economics. That might sound like a truism. But with the increased use of mathematical models in economics and economic history in the second half of the twentieth century, economic history has been done quite differently depending on whether it was situated in an economics or at a history department. By bringing both perspectives together in one book, we would like to strengthen a strand of current research which reconnects with an even older tradition in economic history: Starting with the late nineteenth and early twentieth centuries, prominent scholars such as Max Weber or Gustav von Schmoller have regarded the economy not as a well-defined section of society, but as a part of society which is intricately entangled with politics, social history and questions of ethics. During the past hundred years, there have always been scholars who were convinced that economic activities follow specific rules, but that they cannot be understood if they are not seen as embedded in a society with its specific resources, institutional set-up and norms of behaviour. Albert O. Hirschman and Amartya Sen, for example, rank among the prominent proponents of this view of the economy.

Accordingly, economic history serves as one perspective to study past societies. Recent debates emphasise that to understand economic history, we need both the bird's-eye view and the studies of individual or small group's choices, practices and decisions. The focus on the individual, embedded in cultural traditions, institutional constraints and social obligations, complements the macro-perspective on population movements, aggregate supply or demand, or averages of real wages: Those who want to understand and explain the premodern economy have to comprehend economic processes such as the workings of supply and demand or the concept of inflation. At the same time, researchers of the premodern economy have to grasp the features and basic concepts of a society which is to a certain degree foreign to their own. They have to understand, for example, unfamiliar mentalities with regard to interest rates, or conceptions of a society with a preordained social order. It is also relevant to have a basic understanding of how to read and interpret premodern types of sources.

In sum, to understand and analyse the premodern economy, historians and economists have to work together. This book lays the ground for such a cooperation: It is one of the first to present in one book historians' and economists' work on the premodern economy. The overview of methodological approaches, sources and research discussions will hopefully give historians and economists alike some orientation in the field. In short, the question this book answers is: How can we do premodern economic history? We tackle this question from a very practical perspective: We show how premodern economic history has been studied during recent decades. This brings into view a wide range of methodological approaches and sources.

The practical examples presented here (Chaps. 6, 7 and 8) analyse the Holy Roman Empire during the period c. 1300–1600. The region and the time frame were chosen because both offer a very colourful perspective on economic history: As a non-centralised, rather fragmented European region, reaching from Burgundy in the West to the Baltic Sea in the East and from the North Sea to Italy in the South, the Holy Roman Empire comprised a variety of regions and forms of government.

The period between c.1300 and c.1600 stands out as an epoch of special interest in two regards: First, the quantity and quality of sources that survived differ from the sources that were preserved from the periods before and after: By far more sources have survived from this period than from any earlier period in history, and they cover a greater range of economic phenomena. Merchants became sedentary during the Commercial Revolution of the High Middle Ages. Thus, their business organisation developed into more complex structures as they had to write down accounts as well as letters to their business partners. A differentiated administration emerged in many towns, and the urban council and personnel produced serial, administrative sources. The landlords also began to introduce written records into their administration, while the monasteries were being able to draw on a tradition dating back to the Early Middle Ages. Hence, for the first time we are able to grasp everyday economic practices and to collect data from serial sources. Nevertheless, these sources do not provide statistical data in the modern sense. They were not recorded in order to be evaluated with statistical methods. In sum, the sources have to and can be analysed with a number of different methodological approaches. Researchers who want to study the premodern economy between 1300 and 1600 thus have to reflect meticulously on the methods which they employ.

Second, these three centuries are of interest because they span the time between two periods of fundamental transformation of the European economy. During the fourteenth century, important external factors changed the conditions and constraints for economic activity in Western Europe and Germany: The first indications of the Little Ice Age changed the climate, and longer periods of coldness and more rain modified the conditions for agriculture which lay at the foundation of the premodern economy. The Black Death ravaged Europe between 1347 and 1351, always bringing very high death rates with it and profoundly changing the resources of economic productivity and distribution (see section "Population, Demography and Economic Growth" in Chap. 2). Furthermore, the Commercial Revolution that had changed the way business was done came to an end (section "Commercial Revolution" in Chap. 2). New techniques and tools of administration and trade had been developed and were spreading throughout Europe. In the German lands, more and more towns had been founded, which modified and enriched the economic structure and its institutions (section "Urbanisation" in Chap. 2). Certain agricultural regions were developing into special cultivation areas, with a close connection to urban (consumer) markets, division of labour and a joint organisation of production and distribution.

After 1600, the set-up of the European economy changed profoundly again. Roughly a century after the first wave of European colonisation had started, its effects and consequences began to transform the economic system in Europe: Economic activities became oriented towards the Atlantic Ocean, and the longer and riskier endeavours all around the world prompted the emergence of new kinds of business organisations such as chartered companies. The Thirty Years' War (1618–1648) devastated large parts of the German lands and massively reduced the population. The period between c.1300 and c.1600 is thus characterised as premodern in the sense that this economy was distinctly not a modern one, while in retrospect we can assess that some features of a modern economy were preconfigured during those centuries, such as division of labour, the difference between town and country, or the financing of large enterprises. Many grand narratives of economic history therefore focus on this period: It has been regarded as a prequel to modernity, a time of take-off of the European economy, a time of transition to capitalism. At the same time, premodern economy and society were different enough from our own to be studied in their own right, that is: not only as a run-up to the modern economy but also as an interesting case of how a different economy did work, how it could function and how it differed in outcomes.

The core of the book is formed by 68 reviewed sample studies analysing the economic history of the Holy Roman Empire c. 1300–1600 with a range of methodological approaches and sources (Chaps. 6, 7 and 8). The reviewed sample studies have been selected according to three criteria: First, they focus on the economic history of the premodern Holy Roman Empire. Research on the economy of the Holy Roman Empire is thriving but could be better integrated into the broader international debates on economic structures and transformations in premodern times. Hence, we outline these debates in Chaps. 2, 3, 4 and 5 and then give examples of studies which could contribute fruitfully to these debates in Chaps. 6, 7 and 8. Second, we selected the studies with the aim to offer a broad panorama of possible methods to do economic history. We aimed at including (a) methods which are traditionally used in historiography and in economics, such as prosopography, source interpretation and hermeneutics, or regression analysis, game theory and institutional analysis; (b) methods whose use is currently debated, such as network analysis (is it possible to do network analysis in premodern times?) or comparison (how does a comparison affect the subjects which are being compared?); (c) newer, experimental or less prominent approaches such as digital mapping or analytical bibliography; (d) methods that historians and economists routinely use but seldom explicitly discuss, such as classification, microhistory, source presentation, the micro-exemplary method, modelling or descriptive statistics; (e) methods imported from other disciplines such as archaeological methods or die analysis. Taken together, the reviewed sample studies show how research on premodern economic history both relies on well-tested and established methods and maintains its innovative power to think of and employ new approaches.

The third criterion for selection was the diversity of the sources. We want to show how broad the spectrum of sources is that can be used for economic history. The studies use well-known source genres such as accounts, rural register and wills were used, but also at first glance unusual sources such as artefacts or theological tracts (see Chap. 10). Nearly all the different methods and sources appear in more than one reviewed sample study; thus the reviewed sample studies present different ways of working with the same method or analysing a specific type of source. Hence, the reviewed sample studies give an overview of current research on the economic history of the premodern Holy Roman Empire, and they offer numerous examples how economic history can be done using different methods and exploiting a variety of sources. This book can of course only offer a selection of studies, and hence present a choice of possible methodological approaches and sources for doing premodern economic history. Even with the three criteria outlined above, the choice remains subjective to a certain degree. But since we were 11 main authors and 16 further contributors working together, all choosing the studies we found interesting and enriching according to the three criteria, the subjectivity was at least multiplied. However, numerous other reviewed sample studies could also have been selected and would have broadened the picture of research even more.

The reviewed sample studies organise the rest of this book: The methodological approaches and sources presented in Chaps. 9 and 10 are the ones used in the reviewed sample studies. Chapters 2, 3, 4 and 5 provide an overview of important grand narratives (2) and an introduction of current discussions in premodern economic history (3–5). Grand narratives (Chap. 2) are the grand themes of economic history that form the background of many studies analysed in this book: The Great and Little Divergence, urbanisation, the relationship between population, demography and economic growth, the Commercial Revolution, the emergence of capitalism, transaction costs and institutions, trust and materiality.

Chapters 3, 4 and 5 set the frame for the reviewed sample studies presented in Chaps. 6, 7 and 8. We give definitions of terms mentioned in the reviewed sample studies (for instance, credit, money, the market, crafts, landownership) and present an overview of the current state of research. We provide background knowledge for three main areas of the economy—production (3), markets (4), and money and credit (5). Production forms the basis of every economy, all the more in premodern times (see Chap. 3). The reviewed sample studies on production (6) presented here discuss how food and other commodities were produced, and how the particular premodern way of producing shaped the economy and society. Food and other goods were exchanged on urban or rural markets. In premodern times, other forms of distribution existed besides the market. Here, we focus on market exchange since the main interest of economic historians has been concentrated on studying this particular form of exchange (see Chap. 4). The distinction between market exchange and other forms of exchange often remains blurry, however, and the different forms remained interconnected. The reviewed sample studies on the market discuss different players on the market, the rules and norms of market exchange and the commercialisation of the German economy (see Chap. 7). If goods were exchanged via the market, they had to be paid in money or kind. During the time we focus on here, most parts of the Western European and German economy can be regarded as money economies (see Chap. 5). Money, its different forms and values, and the way it was used and conceptualised thus played an important part in the workings of the premodern economy. Due to the scarcity of coins in premodern times, credit and debt played a fundamental role in economic transactions. The reviewed sample studies on money and credit deal with both immaterial and material dimensions of money and credit (8), showing the variety of financial practices, the strategies for survival and profit-making applied by premodern people. In total, Chaps. 6, 7 and 8 contain a number of 68 studies in the form of meta-studies showing how current and more traditional researchers have applied different methods and have dealt with the source material. They show how the methods have been put into practice, and with what results the sources have been analysed.

Chapters 9 and 10 consist of two glossaries: one of methods and the other one of sources. The first gives a short general introduction into the methods that are employed in one or more reviewed sample studies (see Chap. 9). It is designed as a toolkit for analysing sources for studying the premodern economy and depicts methodological strategies and approaches. Each entry gives a short overview of how the respective method works. Further readings are given for everyone who wants to employ this method in her own research. The glossary of sources (Chap. 10) is complementarily designed to offer some orientation in the vast number of different types of sources which survived from the time from 1300 to 1600. Since the methods and sources sketched here are the ones that are used in the reviewed sample studies, the reader can find at least one example for how each source type and each methodological approach listed in the glossaries has been employed in practice.

This book should at best be read alongside thematic introductions to the events, facts and figures of the premodern economic history and the Holy Roman Empire. A number of classical and very useful handbooks do exactly that, for example, Cipolla (1976), Epstein (2009), Malanima (2009), Persson (2010) and Buchheim, Fouquet, Schulz (2004). Scott (2002) gives a thematic introduction into the German economy 1300–1600. In this book, we provide some useful instruments for a better orientation in the field of premodern economy. Conclusively, we hope that our readers see this book as a starting point for further research on more studies, methods and sources, and that this book might encourage readers to dig deeper into premodern economic history.

How to use this book? All parts of this book can be used separately: You may read Chaps. 2, 3, 4 and 5 to get an overview of the grand themes and current debates in economic history; you may study Chaps. 6, 7 and 8 if you want to see how historians and economic historians work in practice, or you can consult Chaps. 9 and 10 if you want to get an impression of the diversity of methods and sources that economic historians employ, for instance if you are looking for an appropriate methodological approach or sources for your own research. Due to numerous cross-references between the sections, all parts can also be used in connection to each other. For instance, if you search for a specific method, you will also find references to the respective studies described in Chaps. 6, 7 and 8. All entries in the glossary, both for sources and methods, are in alphabetical order. The source keywords are further classified by type of source. The reviewed sample studies are arranged according to the three main themes: production, market, and money and credit. Each chapter lists the reviewed sample studies in alphabetical order of the author's name. Of course, these three themes overlap, so the assignment of some of the reviewed sample studies to just one of the thematic strands can be debated. However, for the sake of a clear structure, we assigned each study to only one of the three main themes.

This book benefited from the work, help and advice of many colleagues. We thank all authors involved in the writing of this book. First and foremost, we thank all colleagues who were working with us from 2015 to 2018 as members of a research group entitled "Handeln, Kalkulieren, Wahrnehmen. Für eine neue Methodik der Spätmittelalterlichen Wirtschaftsgeschichte", founded by the German Research Foundation (DFG): Ulf Christian Ewert, Angela Huang, Stephan Köhler, Niels Petersen, Kathrin Pindl, Christian Scholl, Sebastian Steinbach and Marco Veronesi.

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Grand Narratives in Premodern Economic History

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Grand narratives tell a history with a central theme or leitmotif. They offer one way to explain important transformations that happened during a certain period. A grand narrative organises all the details of a historical process into a more or less coherent story. The grand narratives presented here attempt to grasp how the premodern economy turned into a modern one. Since they all focus on a specific aspect of the economic development, none of them encompasses everything that happened in the European economy from c. 1300 to 1600. Rather, they work as guard rails for research in premodern economic history: They shape the interest that historians take in economic history. For example, in recent decades far more studies on towns and the urban economy have been published than on the rural economy, even though at least 80 per cent of the premodern European population did not live in towns. This notwithstanding, the emergence of towns is regarded as one of the important developments in premodern Europe, and in consequence many researchers want to participate in finding out how exactly this special form of social organisation shaped the European society and economy.

In this chapter, we briefly outline the grand narratives that frame all three main areas covered in this book, namely, production, market, and money and credit. The narrative of the Great Divergence can be regarded as the most influential narrative which has shaped economic history over the past two decades. It sparked intensive discussions in economic history. This strand of research tries to find out why Europeans and the Western world became so much richer than the rest of the world in modern times. Many possible reasons, for example, technological improvements, have a history that reaches back to the time covered by this book. In due course, the Great Divergence was supplemented by a Little Divergence: Higher growth rates in the early modern period diverted the path of economic development taken by the North Sea Region from the rest of Europe. If one looks for specific European characteristics of the medieval economic 'take-off', the towns with their special forms of associations and economic organisations are always mentioned. During the Middle Ages, towns sprang up all over Europe and became especially important in the Holy Roman Empire. This process of urbanisation profoundly changed the structure of the European economy. Towns could only exist if not all the population needed to work in agriculture in order to produce food. The demographic rise of the eleventh to thirteenth century thus laid the foundation for a significant transformation of the European economy. One of the longest-standing narratives in economic history deals with this interrelationship between population, demography and economic growth. In premodern times, the story goes, Europe made its first attempts to escape the Malthusian trap; that is, the growth of the population was not always and everywhere checked by a scarcity of food supplies any more.

The narrative of the Commercial Revolution also starts with the population growth of the High Middle Ages, which promoted substantial changes in agriculture as well as in trade and credit practices. Europe turned from a predominantly agrarian society into a commercial one: Agricultural production remained by far the largest sector of the economy, but it was becoming more and more market oriented, and merchants claimed a more important role not only in the economy, but also in politics, education and culture. The Commercial Revolution can be regarded as a transformation that laid the foundations for the emergence of capitalism. The time period c. 1300–1600 is thus of much interest to researchers who try to find out how capitalism came into being. Such a story, however, can be in danger of seeing the premodern era in a teleological way as a mere forerunner of modern capitalism. In contrast, one way in which to study a historical economy in its own right is to analyse its specific institutional set-up. Every economy is shaped by its institutions, that is, by rules, regulations, norms and belief systems. Institutions determine the transaction costs for economic activities and thus influence economic performance. Institutions structure economic actions and thus make them foreseeable. The same is true for trust, which also serves to strengthen the predictability and thus the reliability of economic actions. The two strands of research, however, have not been combined so far: Is trust an institution or do people trust an institution? The concept of trust structures its own field of research and is hence discussed separately here. Finally, the current trend of focusing on materiality claims that all these narratives could be enriched by including not only written sources, but also artefacts in our historical analyses. We thus present and summarise those traditional and new narratives here as guidelines and tools for orientation, bearing in mind that these narratives are broad constructions including a high degree of generalisation that will not apply to all historical cases. Nevertheless, they are indispensable background knowledge and structure the way economic history is studied and discussed.

In sum, the time between 1300 and 1600 can be regarded as interesting for (at least) two reasons: On the one hand, it is acknowledged as the period when the foundations of our modern society were laid: The time when towns developed, trade and credit became more important, proto-capitalist structures and mentalities emerged, and the Little Divergence within Europe prepared the continent for the Great Divergence, its departure from poverty. On the other hand, the premodern economy still looked distinctly different from our own. Population growth and economic growth were still checked by Malthusian constraints, the institutional set-up of premodern economies was quite different from our own and transactions costs were much higher, and trust was mostly placed in persons, not institutions. The premodern economy is thus not only a forerunner of our own, but also offers an interesting example of how people coped with very different circumstances.

Great and Little Divergence (Julia Bruch)

According to the narrative of the Great Divergence, around 1750 China's economy was on an equal footing with Europe's. Roughly a hundred years later, living standards in Europe were significantly higher than in any other region of the world. The still ongoing and lively debate on the Great Divergence is about how this was possible. Research on the Great Divergence thus tries to find reasons for the different (economic) development of Europe and parts of North America compared to India, China, the Arabic world and Japan.

Discussions focus on technologies, material welfare and prosperity (Epstein 2009, 192). The term is taken from the title of Pomeranz's book

The Great Divergence: China, Europe, and the Making of the Modern World Economy (Pomeranz 2000) and describes the sort of 'European Miracle', which is the title of a book written by Jones 1981. Research on the Great Divergence focusses mainly on the Industrial Revolution, its determinants and its consequences, which led to the unique European path of development. However, Maddison and his team of researchers at the University of Groningen collected a huge database on gross domestic product (GDP). They came to the conclusion that the divergence between Europe and China must have started not in the eighteenth, but in the sixteenth century (Maddison 2001; the files can be found online, http://www.ggdc.net/maddison/oriindex.htm, see also http://www.theworldeconomy.org/#2).

Economic historians of the premodern era have done a lot of research into the developments in periods long before the Industrial Revolution and wondered what caused growth before 1750. These long-term studies looked at economic development and growth since 1300. A Little Divergence is supposed to have paved the way for the Great Divergence. During this Little Divergence, the North Sea Area (England and the Netherlands) enjoyed higher growth rates than the rest of the European continent. The latest works on the Little Divergence were compiled by de Pleijt and van Zanden (de Pleijt and van Zanden 2016, 387–8), who focus primarily on real wages, urbanisation, book production, consumption and agricultural productivity (in selection: Allen 2000, 2001; De Vries 1981; Buringh and van Zanden 2009; Slicher van Bath 1963; Allen and Weisdorf 2011). If one wants to find out why England and the Netherlands were able to prosper on such a sustained basis, one has to explain how both regions were able to free themselves from the constraints of the Malthusian verdict before 1800 (see section "Population, Demography and Economic Growth" below).

The explanations for this economic take-off are mostly sought in institutional change (political and demographic), in overseas trade and in human capital formation. Allen tested this hypotheses and came up with a very comprehensive result (Allen 2003), in the words of de Pleijt and van Zanden: "Real wages, agricultural productivity, urbanisation, proto-industrialisation, and population growth are explained by each other and six exogenous variables: land-labour ratios, enclosure movements, trade levels, representative governments, rates of literacy and productivity in the manufacturing industry. […] the rise of the North Sea area is due to international trade and not caused by human capital formation and/or institutional change" (de Pleijt and van Zanden 2016, 388). In their own study, de Pleijt and van Zanden, however, changed the proxies for human capital formation from literacy to book production and secondary schooling and included Protestantism and its effects on this sub-area. They thus reached a different result: "This conclusion moreover supports growth theories that stress the importance of human capital formation for the onset of modern growth" (de Pleijt and van Zanden 2016, 406–407, quote 407). The question of how the Little Divergence came about is still a topic of lively discussion. However, as with any global theory, researchers should consider the dangers of reconstructing in retrospect a teleological or even deterministic development ('it had to be Europe').

Urbanisation (Ulla Kypta)

The spread of towns all over Europe during the Middle Ages is regarded as one of the most defining transformations of the European economy. When population started growing in the eleventh century (see the following section), towns sprang up in Western Europe. During the High and Late Middle Ages, towns grew and were founded in Central and Eastern Europe as well. Urbanisation can thus be regarded as a truly European phenomenon which was also very prominent in the Holy Roman Empire. Weber claimed that European towns show special features that distinguish them from cities in the ancient world as well as in other parts of the world (Weber 1999). He characterised European cities since the Middle Ages as 'producer cities', in contrast to 'consumer cities' found elsewhere (see also Selzer 2018). Weber's narration was in essence a political story: The medieval town was different from other cities primarily because of a different political set-up. Weber, who was writing in the age of the bourgeoisie, set the medieval town apart because it was inhabited by citizens who formed associations, shared a set of common duties and responsibilities, and were thus able to govern themselves (Boone 2013, 231). However, these self-governed citizens were also able to introduce new forms of economic activities into medieval Europe: While the inhabitants of ancient cities had to rely entirely on the countryside to feed them (and thus can be regarded as mere consumers), the new type of town was buzzing with commercial and artisanal activities. Whereas consumer cities had to force the countryside to sustain them, producer cities could engage in economic transactions with their surroundings or with other cities and could thus take care of themselves.

The story of urbanisation told in the recent *Handbook of Cities in World History* remains in essence the same as Weber's but is now narrated with more nuances (van Bavel et al. 2013). Van Bavel et al. distinguish not between 'consumer' and 'producer cities' but discern coercion-oriented from market-oriented towns. Just like consumer cities, however, coercion-oriented towns obtain their resources by force from their surroundings. They serve as political centres of power, but not necessarily as economic hubs. In premodern times, such coercion-oriented cities could be found in the Middle East and most prominently in colonial South America. European cities in the Middle Ages, in contrast, functioned as economic centres. They were situated along trading routes and not in the middle of a political territory. Van Bavel et al. explain this European distinctiveness with the fact that urbanisation in Europe set in quite late in comparison with the rest of the world.

A specific economic set-up is thus regarded as essential for the distinct role with which the European city is credited. The market plays an essential part in this story (see Chap. 4). The map of every European town shows a market place. In the most rudimentary form, the market served as a place of exchange between city dwellers and the peasants of the countryside and as a place for the urban and rural population to buy foodstuffs and artisanal products. A fixed and regulated place of exchange reduced transaction costs (see section "Transaction Costs and Institutions" below): Whoever wanted to buy or sell something knew where, when and how to do that.

In addition, town councils played an important part in shaping the economic institutions of premodern Europe. Councils actively regulated the urban economy; for example, they set standards for production or banned forestalling. Even though it can be debated whether these measures were effective or not, they set a standard and encouraged discussions on which economic activities were to be regarded as legal and which had to be forbidden. These regulations and the accompanying discussions were undoubtedly shaped by the fact that merchants (and in some cities also artisans) formed at least part of the urban government. Urbanisation brought about not only new modes of production and distribution (see Chap. 3), but also new degrees of poverty and misery: Alongside merchants and artisans, peddlers and beggars also formed part of the urban populace. Since cities relied on the countryside for food supplies, they were often hit especially hard by famines. The large number of people crowded together and the coming and going of merchants and peasants from and to the surroundings of the towns made them especially vulnerable to pestilences. In sum, it is hard to gauge whether urbanisation fostered economic growth or not (van Bavel et al. 2013, 399). Although the quantitative impact of urbanisation on the European economy cannot be determined with certainty, no one has so far challenged the assessment that urbanisation qualitatively transformed the European economy.

Population, Demography and Economic Growth (Ulf Christian Ewert)

The grand narrative of population, demography and economic growth has a history of more than 200 years but is still discussed today. It tells the story of how premodern European economies were capable of escaping from the Malthusian verdict of demographic homoeostasis, economic stagnation and poverty since the eighteenth century and then took on a new path of sustained growth of both the population and the economy. This story relies on Malthus' (1766–1834) (Steinmann 1989) *Essay on the Principle of Population* (Malthus [1976]), which was first published in 1798. In his book, the English reverend, economist and philosopher systematically related material welfare to population growth. Together with

Smith and Ricardo, Malthus became one of the main scholars in classical economics. Since the 1950s, his concept has been very influential as a sort of blueprint of the population history of the premodern era.

The Malthusian analytical framework is very strict regarding the welfare impact of a growing population. Given a constant production technology and limited land resources, any increase in population will inevitably reduce material welfare, because per capita less food than before is available. If food availability falls below the subsistence level of the population, inevitably famines will occur, and this in turn will decimate the existing population and allow survivors to return to a higher level of material welfare again. Without technological progress and without further land resources available, this negative feedback effect—Malthus called this a 'positive check'—causes the population to remain in a long-term state of equilibrium, the so-called Malthusian trap. In such equilibrium, neither the population ('population trap') nor prosperity ('welfare trap') will increase substantially in the long run. However, exogenous technological progress or the availability of new land resources would at least allow an escape from the 'population trap', and also the population would grow in the long run at a constant level of prosperity. A second feedback effect, which Malthus called 'preventive check', would lie in the hands of mankind inasmuch as population growth can be decelerated by abstinence or birth control, for instance.

Ironically, reality had already overtaken Malthus' theory at the time when it was first published. In England, the country that had been so formative for his ideas, the basic assumptions of his model had already become obsolete by the late eighteenth century. For the English economy, scarcity of land was no longer a limiting factor due to the abundance of land in the overseas colonies. 'Overpopulation' was not an issue either, because many Englishmen left their home country and migrated to North America. Finally, the technological progress that was made during early industrialisation also enabled a transition to a modern growth regime (Kuznets 1973). However, this latter development happened essentially outside the agricultural sector to which Malthus' population theory is mainly referring.

The Malthusian population theory is nonetheless still an important reference for studies on premodern demography and economic growth.

Many historical-demographic and economic-historical studies concentrate on the analysis whether or not the Malthusian 'positive checks' and 'preventive checks' disappeared in the early modern period, and when exactly European economies were able to escape from the 'Malthusian trap' (Weir 1991; de Vries 1984/85; Bailey and Chambers 1993, 1998; Morineau 1998; Lee and Anderson 2002; Ewert 2004; Nicolini 2007).

More importantly, Malthus' population theory offers many insights into the medieval demographic development and its repercussions on economic growth. It provides a plausible explanation for the demographic expansion and the economic boom all across Europe during the High Middle Ages, including the regions of the Holy Roman Empire North of the Alps. Because of the warmer climate after c. 1050, agricultural productivity increased noticeably, and by colonisation as well as by eastern-bound migration, a larger amount of arable land could be used for the production of agricultural goods. Both factors triggered a sustained population growth, and together with the foundation of hundreds of towns and a sustained economic growth resulting from this, they formed the socio-economic background of what has to be considered a significant societal take-off. A further consequence of this process was the re-establishment of long-distance trade, an issue that, following the seminal analysis of Lopez, is referred to as the Commercial Revolution of the Middle Ages (see section "Commercial Revolution" below).

Vice versa, the demographic contraction of the Late Middle Ages can also be explained using the Malthusian framework. Not only the severe West Europe–wide subsistence crisis of 1315–1317 (The Great Famine) (Lucas 1930; van Werweke 1959; Kershaw 1973; Jordan 1996), which also affected the northern regions of the Holy Roman Empire, but also the rapid spread of the Black Death (1347–1352) across most of Europe (Bowsky 1971; Biraben 1975; Bulst 1979; Horrox 1994; Platt 1996; Ziegler 1997; Cantor 2001; Vasold 2003) are considered an indication that the carrying capacity of the soil had already been exceeded (Postan thesis) (Postan 1950; Pounds 1969/70; Clark 1992). With the given agricultural technology of the time the current size of population could no longer be supported, to the effect that subsistence crises recurrently occurred, and epidemics became more frequent. This in turn not only had a strong negative impact on both society and population (Bean 1963;

Flinn 1979; Rahe 1984; Bolton 1996; Cantor 2001; Blockmans 1980; Ewert et al. 2003), but also restrained the production potentials of the economy (Lütge 1950; Kelter 1953; van Klaveren 1967; Blockmans 1980; Ewert et al. 2007).

Within Malthus' theory, population growth is quite a negative notion inasmuch as it causes dearth and subsistence crises in the short term as well as population pressure in the long run, both of which suppress and deteriorate the standard of living. The Malthusian theory is therefore considered very pessimistic. However, there is also an optimist's view on population and population growth with respect to its effects on economic development and growth. This optimistic concept is mainly influenced by the thinking of the Danish economist Boserup (1910–1999), who analysed strategies of prehistoric North American indigenous people of coping with population growth and population pressure. She was able to demonstrate that the traditional slash and burn farming was abandoned when the population increased. She thus reversed the Malthusian argument: Population is not driven by the prevalent technology—quite the reverse, technology is adjusted to an increasing population density (Boserup 1965, 1981).

This finding can be generalised for premodern agricultural economies. According to Boserup, population growth and the resulting population pressure is a necessary determinant of technological progress, which in turn allows feeding more people. In addition, a higher population density, which in premodern Europe is observed in the regions characterised by early urbanisation like Northern Italy including Tuscany, Southwestern France, Flanders or the Rhineland, would significantly increase the likelihood of ideas and inventions concerning economic development being exchanged much quicker within the society and being shared by many others. In the long run, population growth will enhance economic growth, and such a positive feedback effect would trigger further economic development and growth. Economic growth and high living standards in the early modern Dutch Republic during the 'Golden Age' of the seventeenth century, for example, can be explained by making use of the Boserupian argument. In the analysis of population and economic growth in the period of transition from premodern extensive to modern intensive economic growth in late eighteenth and early nineteenth century, it makes sense to test for a combination of the positive Boserupian feedback effect with the negative Malthusian feedback mechanism (Lee 1986; Komlos 1989; Komlos and Artzrouni 1990; Kremer 1993; Ewert 2007).

Commercial Revolution (Stephan Köhler, Tanja Skambraks)

Hardly any book on premodern history does not in one way or another rely on the idea of the Commercial Revolution, a concept introduced into premodern history by Lopez (1976). The term Commercial Revolution describes a process of fundamental transformation of society: in a nutshell, Lopez argued that population growth enabled the development of new economic techniques and new organisational forms especially in the realm of trade, which increased economic productivity: Merchants became sedentary, that is, they didn't carry their goods from one marketplace to the other. Rather, they cooperated with partners and agents on other markets and sent their goods by freight. In consequence, merchants began to write large numbers of letters and to keep accounts in order to keep track of their business activities. Population growth also supported urbanisation and, in its wake, the division of labour and the productivity of the crafts. The growing importance of trade fostered the commercialisation of agriculture and a monetarisation of the economy. Between the tenth and the fourteenth centuries, the European economy was thus quantitatively as well as qualitatively transformed. The development of commerce and trade in the Middle Ages is recognised as equally important as the Industrial Revolution (Pirenne 1937; de Roover 1948; Lane 1973; Munro 2001): "the Industrial Revolution was only the final phase, the coherent outcome of a historical development which took place in Europe over the first seven centuries" of the second millennium (Cipolla 1997, xiii).

Important characteristics of this process were demographic growth, changes in agriculture, trade and monetarisation, the rediscovery and dispersion of Roman Law combined with a higher literacy and the further introduction of written record-keeping. Professions such as lawyers and notaries gave the urban middle classes strength, prestige and respectability—so-called intangible values, as Cipolla put it (Cipolla 1997, 69–70). But a deeper analysis of these 'soft skills' still remains to be done in economic history (Pryor 1983, 133).

With the expansion of trade, Europe also witnessed an expansion of the money and credit markets. The rise of commercial activity from the tenth century onwards was not fuelled by a massive input of cash but by means of credit. This was a new phenomenon and differed from the Roman economy that relied heavily on coinage and was ill-suited to provide trade credit on a large scale. Wickham has shown that Mediterranean trade in the post-Roman era depended on internal development, which outlasted the failure of the roman fiscal motor (Wickham 2004, 819–821). It was thus the introduction of highly developed forms of credit in the tenth century that was critical to new business action. The consequences of the better access to trade credit and to new contract formulas became clear only in the twelfth century, when documentation allows us to follow the movement of capital (De Roover 1948; Braudel 1979, 1981; Van Houtte 1980; Edwards and Ogilvie 2012). Thus, the most important change was that in the Middle Ages a growing proportion of business dealings were carried out by credit operations, and these further multiplied the velocity of money circulation. Unstinting credit was the great lubricant for the Commercial Revolution (Lopez 1976).

In sum, the Commercial Revolution affected all areas of the economy, like domestic trade, long-distance trade (overseas and overland) and the monetary system. This development was, broadly speaking, characterised by expansion, innovation and productivity increases. The protagonists of this development were the merchants, forming a new social and (consequently a new) political class and embodying a new mentality that was oriented towards opportunity and profit. They created new forms of contract and corporation (like the *commenda* and the *compagnia*), a European banking and credit system, new means of payment, such as bills of exchange, and innovations such as double-entry bookkeeping (see Chap. 5). In addition, new forms of mass production and entrepreneurship were introduced, such as the putting-out system, including a systematic division of labour (see Chap. 3). With rising salaries, consumption and living standards also increased, which led, among other things, to an increased regulation, for example, through sumptuary laws. According to this narrative of continuous expansion and market development (see Chap. 4), social mobility became a reality.

In today's research, the Commercial Revolution is clearly accepted as a European-wide reality, even though Lopez's study covers mostly the Italian economy as a kind of prototype of the Mediterranean economy. Lopez suggests that similar changes occurred in a similar way in the rest of Europe, something that has never been challenged. It is hard to either prove or refute, however, since a lot more sources survived from the time after the Commercial Revolution is supposed to have changed the European economy than from before. Hence, it is difficult to gauge whether the economies of the Early and High Middle Ages were profoundly different from that of the Late Middle Ages, or if we just know a lot more about the later times. Most researchers agree, however, that the fact that many more sources survived attests that profound changes had happened.

The Emergence of Capitalism (Stephan Köhler, Christian Scholl, Tanja Skambraks)

The narrative of the Commercial Revolution is closely related to the thesis of the existence and emergence of a late medieval and early modern proto-capitalism. This approach traces some facets of modern capitalism in the medieval world, like the accumulation of capital, a growing use of credit (de Roover 1948, 1971; Braudel 1986a, b, c), gradual separation of management from ownership and labour, competition and striving for an improvement of the methods of business (Lopez 1976). This positivistic view must be qualified because "all those phenomena occurred on a smaller scale, affected fewer persons and were much less pronounced than they are in the in modern world" (Lopez 1976, 361). Furthermore, the term capitalism is seldom used as an analytical concept today; the quest for the origins of capitalism has been more or less replaced by the quest for the causes of the Great Divergence. However, the interpretation of the premodern economy as proto-capitalistic—or at least as paving the way for capitalism—has been extremely influential in economic history. We will present three famous examples here, namely, Weber, de Roover and Braudel.

Max Weber (1864–1920), one of the founding fathers of modern sociology, established a connection between the emergence of capitalism and religion. For Weber, modern capitalism is characterised by a specific work ethic: work is regarded as an end in itself. When asking the question as to why people in the Western world, especially in Europe and North America, turned to this way of living, he found the answer in religion, above all in religious asceticism. According to Weber, asceticism alone was a force strong enough to induce human beings to live against their 'natural' character or desires. Although Weber attached great importance to monasteries, where people had lived ascetically in the Middle Ages and which he also considered as economic institutions working rationalistically, if not capitalistically, he saw Puritanism as the decisive factor which paved the way for capitalism.

After its publication, *The Protestant Ethic* was heavily criticised, but it also triggered other studies which tried to explain the origins of capitalism by religion. Probably the most famous of these studies is *The Jews and Modern Capitalism*, published in 1911 by the German economist Sombart (1863–1941) perpetuating influential antisemitic stereotypes. As its title suggests, this study holds the Jews responsible for the establishment of capitalism. That Jewish people played a specific part in the economy is of course a very old antisemitic stereotype, which has influenced European economic theory and practice ever since the early medieval ban on usury, which stigmatised all moneylenders, who were often Jews since the ban on usury did not extend to Jewish people. Sombart ranks among the German intellectuals who underpinned such century-old stereotypes with pseudo-scientific arguments which gave antisemitism its particular brutal power in the first half of the twentieth century.

Raymond De Roover (1904–1972) was also concerned with the connection between capitalism and religion. But instead of work ethics, he focuses on credit. For de Roover, the important feature of capitalism is that people are able to borrow money to invest it in their economic endeavours. A banking system is therefore a prerequisite for a capitalistic economy. However, in premodern Europe, he argues, the religious ban on usury hindered such economic development (de Roover 1971, 11). In contrast to de Roover, the usury ban has also been seen as a catalyst for creativity: According to Noonan, the usury doctrine fostered economic development, since it compelled traders and moneylenders to invent alternative strategies in order to conceal interest rates (Noonan 1957). De Roover himself contends that "perhaps the main contribution of medieval banking is not to be sought on any quantitative achievement but in the development of basic instruments, techniques, and institutions, such as the bill of exchange, the clearing of debts, and the money market, which to this day are the backbone of all the banking systems in the world" (de Roover 1971, 16).

De Roover's perspective is mostly that of a historian of institutionalised credit. By looking at banking institutions and merchant families in medieval towns like the Medici as well as at certain instruments of trade and credit (de Roover 1948, 55f.), he provides valuable insights into the system of 'official' and formalised banking. Recent research, however, has pointed out that credit was well known and in daily use in more remote and rural regions (Fontaine 2014, see also Chap. 5). These credit relations were shaped by informal rules, family ties and personal knowledge rather than banking institutions. The role that these informal but ubiquitous credit relations played in the emergence of capitalism has still to be considered.

Fernand Braudel (1902–1985), praised as one of the most influential historians of the twentieth century, pointed out the necessity of looking at economic developments in a long-term perspective (*longue duree*), which offers a better understanding of economic processes. After Bloch (1986–1944) and Febvre (1878–1956), Braudel was probably the most renowned and important representative of the so-called Annales School. This historical approach—named after the journal founded by Bloch and Febvre, *Annales*—promoted a new way of thinking: The focus shifted from the big events and the great men of the time to the *longue duree* and microstructures, allowing the reconstruction of complex processes of the time and creating a new multifaceted history of everyday life (Komlosy 2011, 15; Horden and Purcell 2000, 36–38). Besides his works on Mediterranean history, Braudel is known for his studies on *Civilization and Capitalism, 15th–18th Centuries*. The series was part of a bigger project initiated by Febvre that dealt with *Western Thought and Belief, 1400–1800*. However, Febvre died before completion and so Braudel, focusing on the development of capitalism in the same period, finished his work alone in 1956 (Braudel 1986a, 13).

Braudel's main point—and that is a big difference between Braudel and his famous predecessors working on capitalism—is that capitalism is something different from the market economy. "The worst error of all is to suppose that capitalism is simply an 'economic system', whereas in fact it lives off the social order, standing almost on a footing with the state, whether as adversary or accomplice" (Braudel 1984, 623). He argues that capitalism does not overlay the entire economy and society, and never replaces them, but rather exists next to other economic forms. Braudel identifies three economic spheres (*étages*): the material life (that covers subsistence and small-scale barter economy), the market economy (that is defined by transparent market rules) and the capitalist economy (that seeks monopolies and tries to avoid market rules). And this basically depicts the order of Braudel's three volumes about *Civilization and Capitalism*. Each book deals with one of the mentioned spheres, starting at the lower level of the daily material life, moving on the market economy and ending at the highest level of capitalism. Capitalism is therefore nothing but part of the whole and it is coherent with social life (Morineau 1989, 55).

In Braudel's opinion, capitalism operates on a level different from everyday material life and the operation of markets. Accordingly, there are two ways of exchange: one is day-to-day barter based on competition, because it is more or less transparent; the other—higher—form is complex and linked to authorities (Braudel 1986a, 58–60). Consequently, capitalism takes advantage of high profit opportunities by linking different markets into a world economy. Braudel introduced the term world economy (*économie-monde*)—in opposition to the economy of the whole world (*économie mondiale*)—as a system of connected markets that act as an autonomous sector of the world (Braudel 1979, 17–22, 44–89 and especially 18; Braudel 1986a, 74–76). These world economies—of which several can exist simultaneously—may spread beyond political boundaries. World economies have a capitalistic core (mostly cities), intermediate regions (semi-peripheries) and peripheries. Capitalism will make use of the hegemony of the core city of a world region and use the international or spatial division of labour to its own benefits and exploit the subordinate regions. However, Braudel sees a coexistence of different exchange forms at all times; regions with subsistence economy may exist next to integrated markets.

The idea of world economies has been elaborated by Wallerstein for his 'Modern World-System' that identifies a single European world economy from 1620 onwards (Wallerstein 1974; for Braudel on Wallerstein see: Braudel 1986a, 76). But Braudel dates the origins of a European world economy, which existed next to others, much earlier, going as far back as to the Middle Ages in Italy (Braudel 1985, 515f.; Braudel 1986b, 428; Braudel 1986c, 106–118. For different aspects of the periodisation and the World-System debate, see Feldbauer and Liedl (2009). Braudel is uncomfortable with any attempts to link the rise of capitalism to the Protestant Reformation, since the developments in the Italian city states from the twelfth century onwards outdate the upheavals caused by Luther and Calvin by several hundred years (see Weber (1904–1905) and Braudel (1986a, 61)). Braudel was one of the earliest scholars who 'liberated' capitalism from both its ideological cage of the nineteenth century and its entanglement with the Industrial Revolution (Morineau 1989, 58).

Transaction Costs and Institutions (Ulla Kypta)

The concept of institutions was reintroduced into economic theory by North. Discussing institutions has been an important part of economic theory ever since Weber (Scott 2008), but when neoclassical models began to dominate economics around the middle of the last century, institutional thinking was forced into the background. North was not the first economist to argue that neoclassical models did not help in understanding economic performance and change, but he was the one who gained prominence with it.

According to North, neoclassical economists were not able to explain the historical trajectory and the performance of an economy because they did not account for transaction costs, that is, the costs of economic exchange (North 1974, 1981). For example, if you want to buy something, you have to gather information about the products available on the market, to compare prices and so on—in transaction cost language, you have to bear the search and information costs. You must then come to an agreement with the potential seller of the product you have chosen. This is labelled as bargaining costs. And finally, you have to make sure that the other party conforms to the agreement that you have reached—that is, you have to bear the enforcement costs. The higher these transaction costs, the less likely you are to engage in the exchange. For instance, if you want to conclude a sales contract with someone, you are more likely to do that if you know the seller, or if someone whom you trust tells you that the seller is also trustworthy, or if you know that you can rely on a legal system that is going to back your claim if the seller takes your money but does not deliver your purchase. If you do not know the seller and if you cannot count on a legal system, the enforcement costs might be too high and the exchange might not take place. Thus, the lower the transaction costs, the more economic activities take place. Transaction costs hence help explain the economic performance, that is, the growth or stagnation of an economy.

Transaction costs are in turn determined by a society's institutions. The institution of a reliable legal system or the institution of close relationships in a network of merchants both lower transaction costs and thus enhance economic activity. Institutions encompass not only legal regimes and rules, but also customs, traditions and codes of conduct. North defines institutions as "the rules of the game in a society or, more formally, the humanly devised constraints that shape human interaction" (North 1990, 3). They structure not only economic exchange, but also political and social interactions. This broad definition of institutions has helped the institutional approach to gain prominence especially with economic historians, who are often at a loss if they try to explain historical phenomena with neoclassical models. Institutions in the broad sense encompass everything that historians subsume as the historical context of a specific economic phenomenon.

Economic historians are interested in how political, social and economic institutions shape the economic performance of a historical society. One prominent discussion concerning premodern economic history revolves around the question whether public or private institutions were mainly responsible for fostering economic growth (see Chap. 4). North was convinced that the emergence of the modern state was a necessary precondition for promoting and securing economic exchange (North 1981). According to North, premodern exchange was hindered by high enforcement costs. The modern state secured property rights and provided a framework for reliable legal arrangements, thus fostering economic activity. This emphasis on the modern state as the precondition for economic growth, however, cannot explain why economic exchange did take place in premodern times and experienced a period of growth during the Late Middle Ages. Greif has thus put forward the hypothesis that private institutions were more important than public institutions for fostering economic exchange in premodern times (Greif 1989). Trade and exchange were organised in personal networks. Traders knew each other because they were related, because they had traded with each other for a long time or because they knew someone who could introduce them into the network of traders. They shared norms of exchange and could punish trespassers by excluding them from the network. Greif's most prominent example are the Maghribi traders, a group of Jewish merchants who traded in the Levant during the eleventh century. His description of the organisation of premodern trade is highly suggestive: Researchers of Hanse merchants, for example, tend to explain how exchange between Hanse merchants worked with Greif's model of privately organised trade, even though they have not yet proven that Greif's explanation can in fact be transferred to the Hanseatic area (Ewert and Selzer 2016). Greif has also been criticised for underestimating the importance of public institutions that enabled the private networks to function (Gelderblom 2013). In recent years, the focus on towns has provided some common ground: towns played an important part in procuring the institutional framework for premodern trade. For example, they issued regulations for market transactions and provided facilities such as warehouses and market stalls. Merchants could rely on urban councils to codify agreements and on urban courts to enforce contracts. Urban institutions can be regarded as public institutions that were in place before the modern state emerged. In many cases, they worked as a back-up of private institutions which shaped the networks of premodern merchants.

The debate on public and private institutions is intertwined with the discussions on the importance of open-access institutions. Public institutions are commonly regarded as open-access institutions: Everyone is allowed to use them. Private institutions, on the other hand, are often restricted to a specific group. For example, every merchant trading in a premodern city normally had access to public warehouses or the urban court system. A merchant guild, in contrast, did also provide legal services, but for its members only. Private institutions with restricted access for members only restricted economic exchange to privileged groups of people. Open-access institutions, in contrast, enabled everyone to participate in economic exchange, and thus created wealth for a larger part of society. It is a hotly debated question whether private, restricted institutions served as forerunners for open-access institutions or whether they hindered the emergence of such public institutions. Private institutions such as merchant guilds, it is argued, helped assemble social capital for their members. Social capital such as shared norms and trust reduced transaction costs and thus enhanced economic activities. Public institutions then emerged to order and regulate these increased activities. However, Ogilvie claims that private institutions encumbered the growth of open-access institutions, which would have fostered wealth for everyone. Everyone who had access to restricted institutions had nothing to gain and much to lose when private institutions were substituted by public ones. Thus, influential economic actors like the eldermen of merchant guilds tried to defend their own privileges, which would be in danger if restricted institutions were replaced by open-access institutions. According to Ogilvie, impersonal markets and impartial public institutions, which fostered wealth, did not emerge out of private institutions such as merchant guilds, but did replace them (Ogilvie 2005, 20).

This debate leads to a broader question which is especially of interest for economic historians, since historians are interested in the variety of institutional set-ups that can be found in different historical societies: If institutions differ, why did they do so? Ogilvie's hypothesis forms part of the social conflict view of institutions (see also Acemoglu et al. 2005): This school of thought claims that institutions were shaped by the most powerful groups in society according to their needs. Another highly influential school assumes that every society chooses institutions which are socially efficient. It focuses on analysing the specific historical circumstances which made a particular institution efficient. Even though historians of premodern times would rarely explicitly accede to this assumption, they sometimes follow a line of argument that is not so different from this efficiency view of institutions: Economists who study modern economic history often regard premodern economic institutions as inefficient.

Historians for premodern times then react to that in pointing out why the existing economic institutions were the best solution possible in the respective circumstances. For example, Hanse merchants are sometimes regarded as backward since they did not employ double-entry bookkeeping. Historians for Hanse history have replied to that by pointing out that no Hanse merchant would have needed double-entry bookkeeping to keep track of his business, since the organisation of Hanse trade differed greatly from the large Italian trading houses, which required more complicated bookkeeping techniques. In other words, in Hanseatic circumstances, the existing bookkeeping institutions were supposedly the most efficient ones. Besides the social conflict view and the efficiency view, a third school of thought is gaining prominence at the moment: Grafe claims that institutions differ because economic actors always use a diversity of institutions for every problem they encounter (Grafe 2015). Likewise, every institution serves to solve more than one particular problem. She calls this the multifunctionality and complementarity of institutions. This approach is especially helpful for historical analyses: When studying past societies and their economic problems, the researcher does not have to judge which institution was most efficient, and she is free from the pressure to explain why the existing institutions conformed to the needs of the elite.

In short, the institutional point of view can serve as a meeting point for historians and economists who are interested in economic history. Institutions are specific for a certain society. Thus, the institutional perspective makes the study of economic performance and change historically sensitive. Institutions which shape economic performance and change encompass not only economic rules in a narrow sense, but also political regulations, social norms (such as questions of interest rates) and ethical questions. The institutional viewpoint thus serves especially well to analyse a premodern economy that cannot be regarded as a delimited sphere and can only be explained in a broader political, social and religious framework. The recent emphasis that economic actors did not search for (let alone find) one best (i.e. most efficient) institution, but always employed and experimented with different institutional solutions, allows economic historians to study the diversity of institutions without the pressure to judge them.

Trust (Tanja Skambraks)

According to French historian and sociologist Fontaine (2008), the Middle Ages were a time of 'under-institutionalisation', which meant that society, and the economy in particular, was characterised by a lack of institutions in the modern sense, providing stable and reliable information, standards and regulations. If economic historians try to explain the workings of the premodern economy, they often resort to 'trust' as an alternative to legally binding contracts and other formal institutions. To employ the concept of trust seems difficult at first, since both conceptual sharpness and direct traceability are missing in the sources. Accordingly, it has been questioned whether it is fruitful to use the concept of trust at all (Guinnane 2005). However, sociologists and economic historians have offered some more distinct definitions of trust that can be helpful in analysing the premodern economy.

One of the basic distinctions differentiates between trust in persons and trust in institutions. Ogilvie built up on this approach and presented four categories of trust which deal with the degree of trust in people and in institutions (Ogilvie 2004). When it comes to trust in people, she distinguishes between particularised trust and generalised trust: Particularised trust depends on certain personal characteristics or the group membership of a transaction partner. People are willing to enter into a transaction because either they know the transaction partner personally or they are members of a group whose other members they trust because they know their business partners. Generalised trust, on the other hand, is the tendency to do business with all kinds of people, even strangers—people whose personal characteristics or group affiliations they do not know.

There are also two ways of characterising trust in institutions: differential trust and uniform trust. Differential trust is a tendency to have transactions brokered by a particular institution, as it is trustworthy in enforcing its particular rights and privileges. For example, a premodern craftsman would have had a tendency to have his business brokered by his guild because he trusted it to enforce his special rights and claims as a guild member. Uniform trust, on the other hand, is the tendency to have transactions brokered by an institution considered trustworthy—regardless of personal attributes—in order to impartially enforce the rights and privileges of all. The constructive link between the specific rights and privileges of each individual economic actor and a particular institution, such as a guild, pawn shop or bank, seems crucial to understanding trust. By trusting both the institution as a whole and its representatives, the individual client or user creates stability and faith in his own actions and in the system: social capital.

Indirectly pointing to the problem of operationalisation of trust, other researchers such as Weltecke (2003) point out that the term 'trust' was not in use in the Middle Ages. Nevertheless, she examines a number of similar concepts from Roman law. For example, *fama* in the sense of good reputation and reliability and moral integrity was an important feature and perhaps best describes what can be understood as trust in the Middle Ages. The term *fides*, which means credibility, steadfastness and seriousness, was an established ethical and political concept in Roman and medieval law. Dimensions of *fiducia* (trust or courage) become visible, for example, in works of art relating trust to values such as truthfulness or justice. In addition to these concepts, which suggest the creation of a well-functioning and stable community, the concept of 'reputation' could be added as an extremely useful working concept when it comes to the analysis of confidence-building by a person or an institution.

On a more general note, the German sociologists Luhmann (1968) defines trust as a means of 'reducing complexity', especially in a society that is confronted with a high degree of contingency and uncertainty, since there are no control and risk management institutions. In its broad definition, confidence-building is closely linked to the (unknown, uncertain and thus overly complex) future. People try to deal with this insecurity by creating security with the help of the trust in the present. Even if it is not possible to create security for the future, trust makes it possible to plan and create expectations for the future. They acquire a certain amount of orientation knowledge. In addition to fundamental, everyday trust in people, Luhmann introduces the concept of trust in systems or institutional trust and combines it with the development of complex and more differentiated societies. Formalisation and coordination processes in institutions that emerged in the fifteenth century can be interpreted as ways of building and strengthening customer confidence. In short, trust means dealing better with contingency, complexity and uncertainty.

Of course, economic relations, for instance, credit transactions, were always risky, so they relied in particular on the mutual trust of the debtor and the creditor.

The idea of trust is employed, first, in studies on networks of merchants, but the concept of institutions features more prominently in this field of research. Second and more importantly, trust serves as an explanation for premodern credit relations. According to this view, people seeking credit did not rely so much on formal institutions such as banks, but rather on informal structures where family members, neighbours or other private individuals made money available in times of need. According to this tale of an 'economy of obligation' (Muldrew 1998), trust must have been a decisive element in compensating for this lack of security provided by formal institutions. Thus, trust as a sociological concept can be incorporated productively into premodern economic history to better understand economic relations as human relations.

Materiality (Julia Bruch, Tanja Skambraks)

In history in general, and in economic history in particular, materiality was established over the last few years as a new heuristic instrument that has proven to be extremely productive and connectable in recent research. Basically, the aim is to include things in research alongside written sources. These things are seen as meaningful signs and testimonies of past times and are integrated into historiographical working methods. Up to now, things have been evaluated above all by ethnologists, archaeologists and art historians sometimes without historical classification and contextualisation (König 2003, 96). The reflections of Riello and Dannehl proved particularly fruitful in German research, too (Dannehl 2009; Riello 2009). Riello's distinction of the 'Varieties of material cultures' in 'history from things', 'history of things', 'history and things' has been widely accepted. Riello calls on historians not only to integrate things as illustrations or decorative accessories into their scientific work, but also to make things themselves heard as well as their complex options of interpretation: "historians should position objects in a dialogue with methodologies and narratives" (Riello 2009, 43).

Appadurai's anthology (Appadurai 1986) can be seen as the beginning of a "renaissance of material culture" as Hahn, the leading German ethnologist dealing with the topic, calls the phenomenon (Hahn 2014, 276). Much has been written about the relationship between the awakened interest in material culture and premodern (economic) history. For a good and pointed summary of the research dedicated to the 'material turn' and its location in the history of science of the nineteenth to twenty-first centuries, see Füssel (2015) and Siebenhüner (2015). Siebenhüner's study is an example of how premodern economic history is profitably brought together with questions of materiality in German research (Siebenhüner 2018). Similar studies are Schmidt-Funke's book on consumption and Menninger's work on luxury goods (tobacco, coffee, tea and chocolate) in early modern Europe (Menninger 2004; Schmidt-Funke 2017). Selzer (2010) can be considered a German pioneer study in the combination of methods of cultural history (materiality) and economic history. Important to mention is the research of Ertl, who, as an economic historian, also approached questions of silk production and silk trade from the textile side very early on (Ertl 2010a, b, 2011). Even before materiality was established as a heuristic instrument in (economic) history, Simon-Muscheid used things to investigate the everyday history of premodern times. Her research focused on everyday work, craftsmanship, division of labour and production (Simon-Muscheid 2004). In the context of trade and finance, objects have also become an important field of interest. Recent and past research (Smail 2016; Kümper 2014; Groebner 1994) has taken into account the great value objects had for their owners, their multiple usage and documentation, for instance as pawns, as confiscated objects in seizures, as manipulated goods, as lifesavers in times of hardship. Objects in their manifold shapes help us understand the economic history of everyday life as well as the extraordinary, the festive and luxurious. Thus, the perception of material goods as meaningful objects deepens the understanding of economic history.

For economic history, the questions of material culture and the use of the new methods of the cultural turn can be a useful heuristic instrument. Objects are now the focus of research, be it woad, silk, tobacco or jewels. By combining cultural-historical questions about the materiality of things and economic-historical questions, issues about production, ways of distribution, ability, knowledge, spread of innovation, functions of things beyond their practical use, exchange of gifts, meaning and use of spoils of war and luxury goods can be examined.

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3

Introduction into the Study of Production

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The three introductory chapters on how to study production, market, and money and credit provide frames for the following reviewed sample studies. They offer some guidance to find your bearings in the jungle of

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concepts and debates which makes premodern economic history such an interesting, but challenging subject to study. Each chapter structures important and current debates in the field and explains the basic concepts used in these discussions. Most debates concern the premodern European economy in general. Whenever possible, we refer to corresponding studies for the Holy Roman Empire. We point to classic texts as well as to newer studies but offer no exhaustive compilation of all the research done in the area.

We recommend reading one of the handbooks, such as Epstein (2009), Malanima (2009) or, for the Holy Roman Empire, Scott (2002), alongside this book to gain a deeper understanding of the processes and phenomena that shaped premodern production, market, money and credit.

We would like to briefly present a commented and pointed research context for the research in German on the topic of premodern production. We mention the subsequent and seminal studies and highlight those that are decisive for the reviewed sample studies. There is no claim of completeness, of course, and non-German studies were used in addition where necessary. Following Fisher (1935), Clark (1940) and Fourastié (1954), the section on production is divided into the three sectors of agriculture, crafts and manufacturing, and services. Before turning to these three sectors, the questions of population and the topic of work are discussed, because production in all its facets cannot be explained without workers.

Population (Ulf Christian Ewert)

Naturally, most people in the Middle Ages and the early modern period remain anonymous, but one can nevertheless make statements about the aggregate population as well as about a population's abilities of reproduction, growth and respondence to economic change (Livi-Bacci 1991, [2]1997; Pfister 1994; Bardet and Dupâquier 1997). This is one of the subjects of historical demography and economic history. However, one should be well aware that the concept of 'population' and the associated field of 'demography' are relatively modern concepts which originate from the country reports and early statistics that were systematically produced in the era of cameralism in the eighteenth century.

At first glance, it might seem extremely difficult if not impossible to give a reliable estimate of the population size for individual European regions or even for the whole of Europe in the time before 1700. Available sources often are too inaccurate to allow any establishment of precise population estimates. This is especially the case for the Holy Roman Empire (Fehring 1987; Pfister 1994; Scott 2002). For the countryside—in Northern France, for example—lists of hearths exist that were recorded for collecting a hearth tax (Fossier 1979). For earlier periods rent rolls can also be used for estimation purposes, because in most of these documents dues are prescribed and thus also the servants of a demesne are enlisted who had to deliver the dues. For late medieval towns sometimes lists of taxation are preserved. Examples are Göttingen (Steenweg 1994), Dortmund (Fehse 2005) and Greifswald (Igel 2010). Since in medieval and early modern towns commonly assets, and not income, were taxed, such lists show the distribution of wealth, at least for those who were rich enough to become a subject of communal taxation. Thus, all sources cover only part of the total population, and population estimates depend on the assumptions made about household size or about the proportion of those people not recorded in the documents. In addition, the number of mills and their output of flour can also be used to estimate population size; for example, this was done for medieval towns in Northern France (Guillerme 1988).

Those problems notwithstanding, many attempts have been made since the 1950s to reconstruct medieval and early modern populations, or to at least give some estimates. Especially for Western European regions, namely France and England, population size was estimated (Dollinger 1956; Fourquin 1958; Neveux 1971; Harvey 1966; Russell 1966). Thus, the idea of reconstructing the population based on church records, like it was done first for England in the period 1541–1871 by the famous Cambridge Group for the History of Population and Social Structure, can certainly be considered as an important scientific breakthrough (Wrigley and Schofield 1989). The births, deaths and marriages recorded in church books became the basis for extensive historical-demographic studies on the early modern period.

Population certainly is an important element in production (see section "Population, Demography and Economic Growth" in Chap. 2), and demography therefore is useful for explaining production, economic development and growth. This becomes clear by looking at a typical neo-classical macroeconomic production function, as is commonly assumed in economic growth theory: output Q (of the economy) is related to input factors labour (L) and capital (K), and in the analysis of agricultural economies also to land (T) (Solow 1956). With such an exogenously given technology, changes in output are caused by either increasing or decreasing inputs. Newer versions of this model elaborate more on the labour variable inasmuch as raw labour input is amended by the educational level and skills of labourers, which then allows incorporating a human capital variable (Mankiw et al. 1992). Newer approaches also emphasise the endogeneity of economic growth. In the long run, production technology is not assumed to be exogenous, since growth usually determines technological change as well (Romer 1990, 1994, 2011; Aghion and Howitt 1997; Acemoglu 2009).

As long as the labour force in the economy is always a constant proportion of the total population, and as long as working schemes are identical for all labourers, population may serve as a proxy for the input factor of labour. Vice versa, a compositional change of the population would also alter the supply of labour. A rapidly growing population is becoming younger on average to the effect that the labour force is shrinking in relative terms even though it might be growing in absolute numbers. As a consequence, both the land-labour ratio and the capital-labour ratio would be affected, which in turn might lead to shifts of power within the society and which might also provoke institutional change.

Given the fact that both size and composition of population are highly correlated with labour as well as with human capital, population growth, reproduction and migration all have an impact on production potentials and on production itself. Therefore, they also drive economic growth, economic development and the development of living standards, to some extent at least.

See reviewed sample studies 4, 18, 34.

Labour (Niels Petersen)

Before any attempt can be made to analyse the phenomenon of labour in the context of economic history, the term labour itself has to be defined and categorised. Labour, from Latin *labor* means to toil and indeed to labour, in English as well as in German. It seems that it was early on rather negatively connotated with hard work, especially when undertaken by servants. Rather positively beset was the term *opus*, in German *werk*, a more creative form of work, as it also includes the product of work. These connotations may be rooted in the form of work which could have been either free or dependent, voluntary or forced. Unfree labour had been drawn on in the manorial system or any other feudal context as compulsory, or in cities as part of communal agreements such as the night watch or fortification works. In these cases, money would usually not have been involved, though some sort of compensation in kind like meals became normal at the beginning of the fifteenth century. Wage labour seems to have spread widely at the end of thirteenth century, at the same time when the manorial system declined and urban markets rose. Wage labour could be found in agriculture at times of a peak in the demand for workers like at harvest time, when socage was not enough to cover the workload on the demesnes and *Meierhöfe*. With the change from manorialism to other forms of landownership (*Grundherrschaft*) like the rent-based lordship (*Rentengrundherrschaft*, rent manorialism) and a growing orientation of crop growing towards the markets, wages paid in money became more common, even socage work was at least compensated by meals. The rise of towns and cities gave rise to a new labour market with a high percentage of free, low qualified day labourers and diverse specialists in crafts. In the late fifteenth century, many peasants grew special cash crops like flax for consecutive refinement in the towns. Market production, public works and services were based on all sorts of wages and payments in money and additionally in kind, mixed wages were common. It is important to consider that town and country were connected tightly by economic relations (see below "Town and Country" in this chapter), hence, rural population could buy and sell on the urban markets and they could work in the town, while urban dwellers often worked on the fields.

Research Topics

Besides the relationship between different kinds of payment, the kind and height of the wages and their volatile nature in relation to the prices for goods are another challenge for research on work in pre-modern times. Prices and wages have been a subject of local research since the late nineteenth century, though systematic research only set in with the publication of Elsas (1936/49), followed by other national collections (Verlinden 1959–1972). In order to recreate business cycles, grain prices were the subject of several analyses, most intensely in the 1970s (Hauschild 1973; Tits-Dieuaide 1975). In this time Wilhelm Abel published his theory of agrarian crisis based on the development of grain prices (Abel [3]1978). He stated that after the Plague grain lost its value, in relation to rising wages as well as to silver. Prices were thus soon connected by research to wages in order to get an image of the real wages and the cost of living (Freiburg 1977; Schulz 1979). The public construction sector featured very prominently in German research as the sources were readily and widely available, furthermore labour within towns was free from feudal ties (Dirlmeier 1978, 1991).

Unfree Labour

Traditional research acknowledged strong ties between unfree physical work and a social stigma of those who had to undertake this labour. On the one hand medieval theology proclaimed that God had placed everybody in his or her class. On the other hand, hard labour has been regarded by medieval theologians as a result of the original sin and therefore as a kind of penitence (Hertz 1980). While this image has been repeated for most of the twentieth century in German literature, current research modifies this view. Cassian of Marseille proclaimed as early as the fifth century that the will to work and to create could be seen as a human way of preparing for salvation. This position had been discussed well up to the ninth century, most prominently by Hrabanus Maurus and Ratherius of Verona, who saw the *opus* of labour as one central part of human striving for salvation, that is, if it is being done by those who work in a way that is agreeable to God. Manual work was part of Benedictine life, even though work in the fields and vineyards had at some point been replaced by work in the scriptorium, which still was seen as labour in apostolic tradition. In the twelfth century Peter Abelard stressed the free will of man and right labour as a product of it (Postel 2009; Rijkers 2009; Schreiner 2006).

The Rise of Employment Contracts

The philosophical and theological discourse certainly influenced the normative regulation of labour. Every form of labour relation needs regulation, because conflicts about the terms of work and the disposal of the product are inevitable. The silence of the written sources about this might indicate that these terms were indeed regulated by social power and convention. The first medieval centuries still know the *servus* (servant) and *ancilla* (maidservant) as property of the *dominus* (master), who had the exclusive right over their labour, time and product of work. The only way such an unfree labourer could articulate power in this relationship was by escape. On the other hand, around the ninth century free men with only small pieces of land placed themselves under the 'protection' of wealthier landowners. They lost part of their freedom and remained poor, but could at least survive (*libera servitus*, 'free servitute'). Their labour changed from being the property of the master to a legal framework, which contained a differentiated scale between free and unfree. Peasants with land that they were entitled to inherit but which wasn't their own were subject to regular payments (*servitium*) and socage to the manors of private landowners, royal *iudices* or monasteries. A specialisation, for example, in a craft could open social mobility even without owning any land. While the protection of the unfree and the mobility of the free grew, still all had to give most of their labour force and of the products of their work away to a master or landowner.

Wage labour didn't appear much in the sources before the late thirteenth century, though it existed in the agrarian world as well. This was especially the case in times of harvest when a greater number of labourers were needed than were available through socage. The fourteenth century then saw growing dynamics in the field of labour. The successive dissolution of the manorial system only left relatively small demesne land to be worked on. The influential law codex of the Sachsenspiegel mentions wage labour in several articles under the terms of *lôn*, *knecht* and *ingesinde*. These groups had a just right to their wages. In the case of the death of their employer their usually lifelong contract automatically ran out. They could either negotiate the continuation of the existing contract, or the outstanding wages had to be paid. Payment, though, was given often as a mix of payments in kind, like food and housing, and money wages. The planned settlement of the colonisation within the Reich and during the eastward expansion from the twelfth century onwards fostered this development, because it in its wake, institutions for cooperative forms of judgement and the setting of frameworks for labour relations were developed. Still, all this meant a slow shift from feudal bonds to contracts in agrarian labour, partly due to the rising importance and availability of money as a means of payment for work.

The dynamic thirteenth and fourteenth centuries, the time of intense urbanisation (see section "Urbanisation" in Chap. 2) as well as adverse climate conditions and demographic crises such as the Plague (see section "Great and Little Divergence" in Chap. 2) and the beginning of the time period covered in this book, saw an intense rise of wage labour. The towns opened up a completely new and different market for goods and products as well as for labour. Ideally, free persons could now, independent of status, dispose of their own manpower, their means of production and their products as well as their income. An echo of status-based labour relations survived in forms of household economy, though now the contract constituted the basis of this relationship. The city councils as well as the guilds were the major players in developing rules of labour including tariffs, a framework within which the individual could offer his or her manpower. While work within the crafts, divided into masters and journeymen, was strictly controlled by guilds, there also existed a free labour market mainly for handymen and unskilled day labourers, in which the poorer social strata could participate. The cities' communal institutions offered further opportunities for workers, most prominently in public construction works. This is perceived as a revolution in the history of labour: away from status based, mostly unfree work, to contract based, mostly free work. Cities and the agrarian hinterland were by no means strictly divided. Municipal tariffs often were adapted for similar work in the fields and on the farms (Dilcher 2006).

Payment by Geding and Time Wage in the Agrarian World

Research has focused on the well-documented urban construction sector, while far less is known about late medieval rural wage labour. Furthermore, any supra-regional analysis of wages and labour in the agrarian sector has yet to be undertaken. Two kinds of workers can be identified in the rural context: Servants who worked for long periods in the house and on the farm, and versatile day labourers who were hired when needed. Both groups belonged to the lower and lowest strata of the late medieval society. Payment could be set to daily or weekly wage or *Geding*, a fixed payment for a certain kind of work irrespective of the time needed to complete the task. Employers then seemed to have been flexible concerning the way of payment, either in money and/or in kind, often timber, food or clothing. Different tasks were paid according to complexity or physical burden. Some tasks were traditionally given to women, like the harvesting of peas and the cutting of spelt, sometimes some, like herding, were also given to boys. The different steps of work were paid individually, while the reaping of meadows, a measurable work, was paid by *Geding*. As tasks varied over the season, for some experienced workers it would have been possible to be employed over the whole season. Still, it was seasonal work and in winter they had to find income elsewhere. Craftsmen like carpenters or bricklayers had chances of work for longer periods. Additional manpower on the fields and vineyards was needed everywhere at the same time, for example, during harvest. Therefore, employers had to make concessions to workers, thus unwittingly creating a certain form of labour market. Rural families could generate significant additional income by offering the labourpower of all their members including the children and women for different kinds of work at different times. How far workers travelled to get an employment is not known, though it seems that villagers concentrated on the nearby big landowners (Fuhrmann 2009; cf. reviewed sample study 13).

Piece Rates and Time Wage in Urban Crafts

The scholars of the Historic School of Economics (*Historische Schule der Nationalökonomie*) assumed that before the industrialisation crafts were generally characterised by a certain hostility towards any form of innovation in processes and technology to be found in the crafts (see section "Crafts" below). They saw one reason for that in the payment of wages by time instead of by piece, which would have fostered a certain unproductivity. That workers before the industrialisation contented themselves in subsistence and did not have any idea of competitiveness is a view that can still be found in the literature. In contrast, fifteenth-century urban sources do show different ways of incentives to increase productivity. Bakers were paid a weekly wage given a minimum number of doughs produced, while the wage of apprentices could be reduced in case of mediocre work. The Austrian textile production knew payment by share of the profit. The specialised workers of the Steyr knife forges were paid at a tariff that had been agreed between the 170 workshops of the region; in 1488 this was 42 denarii (or most commonly *pfennig*) a week plus 5 denarii per 100 blades produced. In the crafts hardly any wages were paid only on the basis of time. There has always been a component based on the output by piece. Be it real piece rate or something like a gratification of work over the top or a minimum output included in wages based on time. This gave the masters the flexibility to react to business cycles. This, in fact, means that the pre-industrial economy was not as defensive towards innovation and markets as the *Nationalökonomen* would have us believe (Reith 2003).

See reviewed sample studies 5, 7, 8, 9, 12, 13, 17, 21, 28.

Agriculture and Mining

Manorialism and Landownership (Marco Veronesi)

This section has to start with some terminological considerations, since the term 'manorialism' has different correspondents among the European languages. They all have in common that they have been elaborated for the Early and High Middle Ages, and they also have in common the notion that power derived from real estate property, a concept which originated among the liberal historians of the nineteenth century (van Caenegem 1988: 197f.; Blickle 1995; Schreiner 2000). They nonetheless differ markedly in terms of their, in a narrower sense, 'political economy' (Dilcher and Violante 2000; Bourin and Martínez Sopena 2004, 2007; Wickham 2004; for further reading on this topic see Zangger 2012).

The *Grundherrschaft* defined in German historiography points to an all-embracing economic, political and juridical power of the landlords, even more so since the concept was combined and aligned with the *autogene Adelsherrschaft*, an idea brought forward by the historians of the German *Neue Verfassungsgeschichte* (new constitutional history, Tabacco 1960; Böckenförde 1961; Reuter 2004). They claimed that power was not only derived from landed property, but also, and at the same time, from the power of being noble on its own terms, from an idea of power inextricably linked with the concept of nobility. The concept found its possibly most prominent expression in the dictum of 'shelter and protection' (*Schutz und Schirm*) guaranteed by the powerful, in reward of counsel and aid (*Rat und Hilfe*) offered by the subjected—which in general, without a doubt, consisted in working the fields (Brunner 1939). The French and Italian terms, in contrast, are more restricted to the economic sphere. The political and jurisdictional authority of the noble landowners was not an *autogene Adelsherrschaft*, but delegated by a still existing and functioning public authority guaranteed by the king. However, these public, state-like structures vanished during the tenth and the twelfth centuries. The aristocracy now assumed the former public prerogatives—which they always held *de facto* in their hands—mostly by violent usurpation and by the invoking of the public power of their ancestors (Duby 1953; Sergi 1999) and forged peasants with their economic power to the so-called *seigneurie territoriale* or, in Italy, the *signoria rurale* or *territoriale*—a *de jure* lordship (Wickham 2004).

It is not of relevance here to discuss whether in Germany such a 'feudalisation' did come to pass or not, but it seems clear that the German model, blamed for downplaying the violent character of medieval power (Algazi 1996), shows almost no reference to any public authority. In France and Italy, the *seigneurie foncière* and the *signoria curtense* are conceived as based on rights deriving directly from the possession of land, while there has been a second dimension of lordship delegated by or usurped from a public or royal authority. In contrast, the German *Grundherrschaft* acts as an all-in-one term for early and high medieval lordship. The English 'manorialism' seems, in its reference to the manor as the principal unit of agrarian production, similar to the *signoria curtense* or *seigneurie foncière*. Thanks to the wholesale conquest of England by the Normans and their fostering of a large stratus of free peasants enjoying the king's juridical protection, no such thing as a *seigneurie banale* ever developed in England. 'Manorialism', thus, was a form of lordship restricted to the unfree serfs of the manor (and much more tied and bounded to the royal authority as e.g. in Germany), while it found its political and juridical counterpart in the kingdom (Fourquin 1970; Reynolds 1994; Comninel 2000; Britnell 2008). Regarding monastic and ecclesiastical lords, the differences between the European countries turn out to be less important because of the juridical immunities granted to them by the kings. These entities could therefore easily bind together their economic power on the one side and political and juridical authority on the other side (Rosenwein 1999: 185).

Manorialism and the Decline of Serfdom

Manorialism as a form of exploitation of the soil (and of the peasants) existed for many centuries, in many areas until the end of the eighteenth century, or even until the twentieth century (Sundberg et al. 2004). The extent to which such manorial forms of agriculture persisted has been at the heart of fierce debates. It has been mainly the English case which has been under investigation since the 1960s, and the debate concentrated on the question of serfdom and its decline in the fourteenth century. With the term 'serfdom' scholars labelled the peculiar form of personal bonds which existed between the landlords and the peasants working on the manor and the legal status of the latter. With reference to terms like *servi*, *mancipia*, *ancillae*, *coloni*, *massari*, which were used in the English as well as in the continental sources, serfdom was conceived of as an "inherently exploitative relationship, skewed heavily to the benefit of landlords" (Bailey 2014: 3). In 1300, of five million people living in England two million were bondmen, and unfree land comprised nearly half of all peasant land (Bailey 2014: 3f.; Epstein 2009: 51). The peasants not working directly on the demesne (who did not dispose of any own land apart from, maybe, some parcels for the cultivation of vegetables and fruit) were endowed with hides (*mansus*, *huba*) and own houses. They had to perform labour services; they had to deliver fixed amounts of kind to the manor; they had to hand over their best cattle, if they wanted to inherit the hide; they had to ask for permission if they wanted to marry, and, before all: they could not move away without the permission of the lord (Hanawalt 1986; Rösener 1991; Bourin and Martínez Sopena 2004, 2007; Cortonesi et al. 2006).

However, in 1400, the share of bondmen among peasants had significantly diminished. Three primary explanatory factors of change have been identified, but their share and relevance are contested (Dyer and Schofield 2007: 33–38). Promoters of a Malthusian approach (see section "Population, Demography and Economic Growth" in Chap. 2) argued that the massive increase in population during the thirteenth century must have exceeded the capacities of agrarian production, a theory which was brought forward in 1935 by Wilhelm Abel for the German-speaking regions (Abel [2]1935; Postan 1949/50; Le Roy Ladurie 1966). This led to a demographic crisis which was dramatically reinforced by the terrifying waves of the Black Death, beginning in 1348/49.

This story has been challenged by Marxist-inspired historians since the 1970s (Brenner 1976; Aston and Philpin 1985). In their opinion, the exogenous factors of famine and plague alone could not have caused the decline of serfdom and, in general, the late medieval crisis. In their eyes it was predominantly a question of class relations, the political rather than the economic relations between landlords and peasants which were decisive. The landlords did not see any need to invest in the soil, in the facilities and in the techniques of their demesne, as it has been easier to achieve higher rents by squeezing them out of the farmers. "Thus", wrote Robert Brenner (1976), "the surplus-extraction relations of serfdom tended to lead to the exhaustion of peasant production per se; in particular, the inability to invest in animals for ploughing and as a source for manure led to deterioration of the soil, which in turn led to the extension of cultivation to land formerly reserved for the support of animals. This meant the cultivation of worse soils and at the same time fewer animals – and thus in the end a vicious cycle of the destruction of the peasant's means of support" (Brenner 1976: 33). Ultimately, according to Brenner and others, it had been this productivity crisis which led to the demographic crisis, not vice versa. A third model of explanation, the so-called Commercial Revolution (see section "Commercial Revolution" in Chap. 2), argues that the monetisation of society in the thirteenth and in the early fourteenth centuries led to the commutation of labour duties into money rents. This model has rarely been adopted for the German-speaking countries. Only recently Gosh took up the topic, scrutinising the accountability of the Scheyern abbey in Bavaria (Gosh 2017).

All three models, ultimately, reach the conclusion that there had been a shortage of labour since the mid-fourteenth century. Combined with falling grain prices due to lesser demand, a 'seigneurial reaction' was inevitable. The landlords tried to control the mobility of their subjects, they augmented the labour and money rents and they also cooperated to cap the rising wages of the rural workers, in order to avoid further incentives for their bondmen to move away. But, at least according to the Brenner model, they were successful only in the eastern European countries, while they failed in France and western Germany. In England, the uprisings of peasants against the pressure exerted from the landlords ultimately did not lead to improve the peasant's conditions, but to the 'enclosure movement'—the beginning of an English 'agrarian capitalism' (see section "The Emergence of Capitalism" in Chap. 2). In France and in western Germany, peasants had long before been able to establish the right to use the commons, to fix their rents, to secure hereditability and to elect village representatives. They had thus been in a much better position against their lords even before the fourteenth century, and serfdom and with it manorialism had been on the retreat long before the Malthusian crisis and the Black Death, as has been pointed out for the manorial organisation of several monastic communities in the German Southwest, after studying their extant real estate registers (Rösener 1991). This argument is backed by a large amount of international research, and in large parts of Europe the decline of serfdom is still seen as a century-long process beginning in the High Middle Ages (Freedman and Bourin 2005; Bois 1985: 109).

The 'seigneurial reaction' following the shortage of labour, on which most scholars agree, hints however to a phenomenon whose agents are not satisfactorily explained yet: the 'second serfdom' (zweite Leibeigenschaft), which Brenner sees evolving in the eastern European countries—including the lands of the German eastward expansion—since the fourteenth century, but which is very well attested for other areas too, that is, larger parts of Southern Germany. It is, however, much debated whether we have to conceive such forms of servitude as remainders of the medieval serfdom and, therefore, as a result of the 'seigneurial reaction', or, rather, as a new form promoted not by landlords but by the princes who wished to create a uniform stratus of subjects (Kula 1976; Freedman and Bourin 2005; Blickle 2003). Against the former hypothesis it has been argued that the earliest evidence for the 'second serfdom' stems from the second half of the fifteenth century—it cannot, therefore, be seen as a reaction of landlords to the shortage of labour provoked by Malthusian crises and the Black Death (Aston and Philpin 1985). For the East Elbian regions the 'second serfdom' has recently been negated as a general phenomenon, stipulating regionally restricted case studies (Cerman 2012).

Newer research on the topic has focused on a greater variety of factors to explain the decline and persistence of serfdom in the Later Middle Ages, among them peculiar family structures and inheritance customs (Dyer 1998: 120). For Germany, the environmental factors have recently been pointed out (Rösener 2012).

Rentengrundherrschaft (rent manorialism), Agrarian Capitalism and the Late Medieval Village

If serfdom and with it the manorial organisation of agriculture, as conveyed since Carolingian times, stopped being an organisational principle of rural society, other principles must have taken its place. For most of the European countries we can detect such a new pattern in the commutation of customs—essentially labour dues—into rents—dues in kind and in money. The shortage of labour since the fourteenth century, along with increasing market opportunities for rural producers, led the lords not only to increase the pressure on the peasants but also to an adaption of the mode of production, that is, to the diminishing of the former demesne land of the manors and the subsequent leasing out of the former customary parcels (Brenner 1976; Whittle 2000). As was said above, in Germany and France this process was still underway in the thirteenth century. German scholars called this emerging system rent manorialism (*Rentengrundherrschaft*). Sometimes, the landlords leased out a greater part of the former demesne to one single tenant (*Meier*), who was responsible for collecting the rents and who also played an important role in the jurisdiction within such tenures. In this respect the development on the continent seems similar to the 'enclosure' movement and the corresponding unfolding of an agrarian capitalism in England (see section "The Emergence of Capitalism" in Chap. 2). But the 'manor' in Germany was, by rule, substituted not by large estate farms, but by village communities. In Germany, the study of such communities has been most prominent since the end of the 1950s, and they can be seen as a starting point for the investigation of late medieval manorialism (Patze 1983; Haverkamp 1983: 316–321). Such villages bundled many of the smaller farms belonging to different landlords and gave birth to cooperative associations, in legal as well as in economic perspective as described above. The power and control of the landlords over single peasants diminished, and the village community negotiated the rights and terms of use with the landlords and adopted fiscal and jurisdictional rights (Blickle 2000; Teuscher 2007). Most recently Brun, using tax registers and court rolls of the Cistercian abbey of Salem, has argued that such a development need not have been conflictous, as long as there was a legitimate 'government' (Brun 2013). But terminological problems still constitute a major part of the debate (Schreiner 2000).

Landownership

Several recent studies of late medieval agriculture and manorialism have brought forward the necessity of new approaches in dealing with the different legal forms of landownership. In the manor of the Early Middle Ages there were very different forms of customs and rents, be they labour dues, customs in kind or money rents, and in any case not all the land around a given manor house belonged to the same landlord (Schreiner 1996). Only a small part of the cultivated land was free property, that is, free of all customs and other dues. In many parts of Europe such land was called *alod* or *hereditas*, because in most cases the land was inherited and had to be entailed again (see below "Collective goods"). The overwhelming part of the cultivated land was held by lease. The leasing out of land was the fundamental, all-embracing idea of possessing land, but the legal forms by which such land was held by the tenants were manifold. Apart from the fact that there was contractual freedom in all parts of Europe and that, as we have seen above, peasants were always able to bargain the specific terms of their tenancy with the landlord, we may discern a few very common forms of land lease. Only recently the insight has been gaining ground that the wealthier peasants, bailiffs, stewards and other officers and administrative personnel of the lords (*baillis*, *ministeriales*, *maiores*), castle custodians, forest wardens, blacksmiths, fishermen and also many lesser servants held their land by the rules of feudal law, which mainly regulated the respective questions of succession and inheritance (Kasten 2013; Andermann 2013). Other common contractual forms stated that the peasant had to deliver a third or even half of all their produce to the locator, leaving them not much more than the seed for the next season. But the names for such contractual forms were manifold, and their meaning always oscillated between denoting a form of contract and denoting the conditions of the contract (Cortonesi et al. 2006; Toch 1986). As with the fiefs, giving such copyhold or customary land in inheritance required the permission of the proprietor, be he a 'landlord' or just a 'land owner'.

Methodologically, the question of discerning these forms of contracts is one of the current problems for the studies of late medieval manorialism, as very often the terms of lease for the fiefs were recorded in the same registers as the customary land; and the difference between the two is actually not very clear, all the more as the conditions of holding a fief in many cases were not less burdensome than in the case of customary or copyhold land (Thoma 2010; Kasten 2013). One further problem is the fact that very often several duties and rights, belonging to several persons, continued to be attached to the same real estate. With the purpose of focussing the economic instead of the legal aspects of landholding, it has been pointed out that economic historians should rather focus on the network of customs, rents and other duties enduring on the ground—instead of asking for the 'legal quality' of the ground itself. This way we are also able to discern social groups within the common idea of a dualism of peasants and landlords (Stamm 2010, 2013; Sonderegger 2012, 2015). As another way to this purpose the study of land markets has been brought forward (Ertl 2017).

Finally, one very common form of landholding is the life rent (*Leibgeding*, *Erblehen*), that is, the right to hold and use land for one's life time. Fiefs as well as leasehold land and copyhold land could be given as life rent. This contractual form was often used to keep hold of land given to the church as a memorial donation, as a reward for servants for their longstanding service, or as a security for maintenance, mostly disposed by men for their wives in case of their own passing away (Kasten 2013).

See reviewed sample studies 1, 5, 10, 13, 52.

Collective Goods, in the Middle Ages (Ulf Christian Ewert)

Collective Goods in the Medieval World

From the point of view of a rather conservative economist, medieval towns are thought of as being the very model of places of production and sale of private goods. Town inhabitants handled various types of private goods. These were the foodstuffs, commodities and services they either were consuming, producing, refining or trading. Thus, it seems as if both the wealth of medieval towns and the inhabitants' welfare were based on the exchange of private economic goods only. However, the medieval world was full of collective goods, too. Common lands (*Allmende*) are the classical example of a common-pool resource that was in widespread use within agricultural production in medieval and early modern Europe. And daily life in medieval towns was also shaped by a variety of collective goods. Such collective goods were not necessarily always physical objects. Some of them like streets or common water were of material nature. Some others like security, fire protection, civil rights, jurisdiction, price stability (Persson 1999) or even the notice of time on public clocks (Dohrn-van Rossum 1992) were intangible because of their immaterial character. A town's defence is an illustrative example of a non-material collective good—defending the community's integrity—to be materialised in a physical collective good—the massive town walls, probably the best-known symbol of the town in medieval Europe, that in many places were constructed in twelfth to fourteenth centuries to protect everyone living inside these walls.

Definition and Typology of Collective Goods

Economics provides us with a definition and a typology of collective goods. The economic characteristics of a certain good can ideally be grasped by distinguishing four categories. This classification is based on the good's subtractability and excludability (Dionisio and Gordo 2006). In general, collective goods are non-private and they do allow collective use. This definition includes (pure) public goods, common-pool resources and club goods. Pure public goods are neither subtractable nor excludable (Olson 1965; Buchanan 1999). Once a public good is produced, the good itself is not depletable and the marginal benefit consumers derive from it is constant for everybody, because it can be used by more than one person at the same time. Thus, there is no rivalry between the consumers of a public good. Also, none of the potential consumers can be excluded from consumption, either because it is impossible or too costly to get accepted. In contrast, private goods are both subtractable and excludable. Security, fire protection and price stability are examples of pure public goods that were common in medieval towns (Table 3.1).

Table 3.1 Typology of economic goods following the classification made by Dionisio and Gordo 2006

	No rivalry (degree of substractability = 0)	**Rivalry** (degree of substractability = 1)
No exclusion possible (degree of excludability = 0)	Public good	Common-pool resource
Exclusion possible (degree of excludability = 1)	Club good	Private good

Other types of collective goods are club goods and common-pool resources. A club good is excludable but not subtractable. Like a public good it is not depletable, but consumption can be restricted to a particular group of people who pay a fee in return of their privilege to consume. Vice versa, common-pool resources are subtractable but not excludable, meaning that they are open to everybody, to the effect that everyone's use makes them depletable. Civil rights are a typical example of a club good, because in medieval towns only those inhabitants formally accepted as citizens were enjoying political rights, for instance. The economic benefits that craft guilds—acting like a cartel—generated in favour of their members are another example. In contrast, water is an example of an important common-pool resource within medieval town communities. Its use and pollution by the town inhabitants made water a highly depletable good.

Problems of Provision, Maintenance and Management of Collective Goods

Economic reasoning also helps to better understand the various problems that are inherent to collective goods. Each of the four ideal types of goods causes specific problems of provision, maintenance and/or management. Private goods require a definition of ownership, whereas for club goods it is necessary to distinguish clearly between those who are eligible to consume ('members') and those who are not ('non-members'). As mentioned above, common-pool resources are constantly in danger of being depleted because of their lacking excludability and the prevalent 'over exploitation' resulting from it, a phenomenon commonly called 'the tragedy of the commons' (Hardin 1968, 1994; Ostrom 1994; Ostrom et al. 1994). Finally, public goods usually do not have a real price because of the positive externalities coming with them, a benefit which none of the consumers wants to pay for. As a result, there is no incentive for private persons to either produce or maintain a public good, which in fact means that usually communities have to provide their members with public goods and are responsible for their maintenance and management.

Typical problems of the provision, maintenance and management of collective goods in the medieval society and some of the solutions found to solve such problems are described in two reviewed sample studies here—on the peasants' cooperation in production and marketing of agricultural produce (Volckart 2004a, b) and on the provision and management of common waters in medieval towns (Ewert 2007).

See reviewed sample studies 4, 19.

Town and Country (Niels Petersen)

In the Late Middle Ages, the relationship between towns and cities and their respective *Umland* (the surrounding countryside), had already become complex. While inhabitants of small towns to a large degree had rural property on which they worked and produced (hence those towns are commonly called *Ackerbürgerstädte*), the big cities show less personal exchange with the countryside, but rather a lot of structural connections. Current research identifies four main categories of town-country relations: demography, power relations including legal regulations, market relations and economic relations in general, and finally cultural and ecclesial relations (Isenmann 2012).

The admittance of new citizens (*Neubürger*) is well documented, so that from the origin of these persons the sphere of urban influence can be deduced. Citizenship, though, could be differentiated. There were citizens living outside the cities (*Pfahlbürger*, *Ausbürger*) while most of the urban population did not enjoy citizenship. The population of the suburbs was subject to yet other forms of regulation. Sometimes inhabitants of nearby villages were obliged to contribute to urban fortification or the maintenance of important infrastructure like bridges.

Earlier research has focussed on urban rule over nearby villages, that is, on urban territories. This can mostly be found in the biggest cities and especially in the *Reichsstädte*, for example Nuremberg, Lübeck, Ulm or Rothenburg. They had the resources and the political ability to maintain their rule over the *Umland* (Dannenbauer 1928; Düker 1932; Wunder 1979). From the second half of the fourteenth century onwards the urban economic elites often invested parts of their capital in landed property close to their home cities. This was possible due to the falling prices for grain and hence land which led to the disposition of land by the local nobility who were looking for alternative investment opportunities like rents. Mostly in the Southern parts of the Reich these citizens aimed at an imitation of noble lifestyle in the countryside (Kießling 1979; Krieger 1985; Orth 1985; Schnurrer 1985). Some historiographers emphasised the element of exploitation of the rural population by urban landowners, while others regarded this as an opportunity for the rural population to gain money (Fritze 1976; Rippmann 1990).

In the wake of a new appreciation of economic history German research on urban-rural interactions saw a boom around the late 1960s. It aimed at describing the power and influence of the urban markets, speaking of the countryside as urban hinterland. These studies were often based on the central place theory, developed by Walter Christaller as early as 1933, paving the way for the Nazi's settlement programme in eastern Europe. It defines centre and periphery and different spheres of economic centrality between these poles, like the *Nahmarkt* (close to the market), the wider market region and the long-distance trade (Ammann 1963; Hill 2004). For the late medieval situation this concept has been discussed in manifold ways (Jäger 1998; Irsigler 1983; Meynen 1979) and by the early 2000s had been rediscovered by archaeologists (Biermann 2015). It has been noted that the urban markets influenced the directions of traffic and trade (due to staple rights) and led in part to a commercialisation of agrarian production (Kießling 2011; see also Chap. 4) and sometimes created or at least highly influenced the structure of the rural landscape in respect to the growing of cash crops like woad or flax or by creating labour opportunities in the putting-out system, especially in textile production (Kießling 1989; Kirchgässner 1974; Scott 2002). To analyse the relations between the centres is an obvious consequence. In these cases, research tends to use methods of network analysis to make these relations visible and quantifiable, a field in which in the future digital tools will be crucial.

Taking the perspective of the city furthermore fostered the reception of the concept of von Thünen (1783–1850). In the model of Thünen's circles, peasants would produce what brought them the highest income, resulting in a special pattern of land use from horticulture to extensive agriculture (Trossbach 2012; Padberg 1996). This model explains particularly the close surroundings of the towns and cities. This area is somewhat special when it comes to power relations, property and legal rights. Often this so-called *Stadtmark* or *Stadtfeld* stretched up to 7 km around the towns, and here, almost exclusively urban property would be found like gardens, fields, beekeeping, meadows and pasture, brickyards and mills or places to wash and bleach, and not least chapels, leproseries and the gallow and often ephemeral suburbs (Köppke 1967; Johanek 2008).

Recent works synthesise these concepts in their case studies (Bönnen 1995; Hirschmann 1996; Hafer 1993; Butt 2012; Petersen 2015).

New concepts regarding the constitution of space(s) are currently being adopted for research on the medieval city. Following the works of the *Annales*, Foucault, Lefebvre and Bourdieu, spaces are regarded as being socially constructed. Most research focuses on interurban spaces, but questions arise of how towns could get hold of extramural property and power and how they managed to keep it over centuries against nobility and princes (Hochmuth and Rau 2006; Ehrich and Oberste 2009; Petersen 2015).

See reviewed sample studies 9, 10, 13, 29, 57.

Mining (Ivonne Burghardt)

In medieval times (and later) precious mining (silver and gold) was distinguished from non-precious mining (tin, copper, lead, coal, stone etc.) by the legal definition that the first was subject to a 'regalia right' (royal right, *Bergregal*), while concerning the latter all rights belonged to the landlord. Due to its insignificance to the sovereign, regulations regarding non-precious mining were often not worth writing down or preserving before the fifteenth century (Bartels and Slotta 2012: 113). Therefore, research has so far focused mainly on the subject of precious mining. During the twelfth and thirteenth centuries new considerable silver ore deposits were discovered all over Europe. The question whether this took place by accident or as a result of extensive prospection is still a controversial issue. Some areas became widely known as most prosperous mining districts, such as Freiberg in Meissen (c. 1168), Jihlava (c. 1230s) and Kutná Hora (c. 1290s) in Bohemia, and became significant economic centres for the whole region. Due to the sovereigns' regalia rights over the mines, he received considerable revenues from mining in his territory. By the *Bergregal* the sovereign claimed himself to be the owner of all metals in the underground in his territory. He, or, as the case may be, his highest mining official (*Bergmeister*), was allowed to assign the mines to anyone. The *Bergregal* also ensured the sovereign a share of every mined silver (*Bergzehnt*). The early formation and legal handling of the regalia of the mines remain to be studied (Asrih 2013). By the Golden Bull (a royal decree) in 1356 the *Bergregal* became officially assigned to the electoral princes (*Kurfürsten*).

According to the *Bergregal* the sovereign alone was allowed to buy all silver from the mines of his territory for his mint while he also set the purchase price. Furthermore, only the sovereign was permitted to regulate the currency (*Münzregal*). His profit was yielded by the difference of the purchase price for the silver from the mines and the silver content or the number of the coins. To gain a higher profit the sovereigns often reduced the silver content of the coins or increased the number of coins which were minted out of the same amount of silver, while purchasing the precious metal for a constant price. The mint and currency development are a favoured research topic for innumerable regional and transregional studies (Spufford 1988).

The discovery of rich new silver ore deposits came along with a fast growing and therefore permanently changing economic and social infrastructure in its immediate environment. This caused progressive improvements in mining regulations, administrational practices and business models. During the nineteenth and early twentieth centuries research focused basically on mining codes, which resulted in editions including detailed commentaries (e.g. Trient: Hägermann and Ludwig 1986; Freiberg: Ermisch 1887; Iglau: Zycha 1900; Kuttenberg: Pfeifer 2002; Goslar: Frölich 1953).

Another specific development concerning the mining branch was the formation of different types of owning and operation organisations in the mines, which was accompanied by a simultaneous emergence of special legal and economic structures. On one side there was one worker

(*Eigenlehner, Lehnhauer*) or a small group of miners (*Gewerke*), who leased a part of a mine and worked for their own outcome and on their own risk. They gave shares to the owners of the mine, for example, a group of other miners who held a mine with no temporary limitation (*Erbgewerke*) from the sovereign. On the other side were the miners, who worked for weekly wages. They were employed by investors who could be non-miners, merely shareholders of a mine. This process of the forming of early capitalist business models was a main topic in scientific research (see section "The Emergence of Capitalism" in Chap. 2), particularly in the socialist era (Strieder 1925; Köhler 1955).

For the time from the twelfth to the fourteenth centuries technical and social aspects were hardly considered in scientific terms. For example, questions concerning the degree of migration between mining districts or religious and gender-related studies are still outstanding issues. The same applies to working conditions and smelting techniques, which are rarely considered, due to a lack of written sources. Therefore, in order to deal with these aspects, it is necessary to work on an interdisciplinary level by including art and linguistic history, as well as the results of archaeological, anthropological or geological studies.

In the Late Middle Ages precious metal mining declined in all major mining districts in Europe, and several regions abandoned the silver production completely. This development has been characterised already in the 1980s as an understudied aspect of mining history (Westermann 2004: 9). It remains so until today.

In the second half of the fifteenth century new significant discoveries of rich silver ore deposits initiated a second mining period in Europe. Major mining districts evolved in Schwaz (c. 1420s; Bartels and Slotta 2012: 390), in Schneeberg (1471) and Annaberg (c. 1490s) in the Erzgebirge (Laube 1974) and in Joachimsthal in Bohemia (1516; Schenk 1967/1968). The increased mining activities in Europe since the second half of the fifteenth century were accompanied by essential changes in administration, economic structures and technical innovations. New mining regulations constituted an intense control of the sovereigns (*Direktionsprinzip*) especially in mining administration (Laube 1974: 52).

Principally, mining remained the business of the territorial lords as their regalia right and was not regulated by the administration of the empire.

Next to silver mining, lead and copper exploitation became more and more important during the course of the fifteenth century. The reason was a significant technical improvement in the smelting process, which brought a major increase of production by the segregation of silver from copper with lead (*Seigerprozess*; Suhling 1976). Considerable copper and lead mining districts were Mansfeld (Südharz), Schwaz (South Tyrol) or in Slovakia. Trading companies like the Fugger and Thurzo, who early on monopolised the copper and lead trade in some of these mining districts, became one of the wealthiest families in Europe (Palme 2000: 29). Most of these mining deposits were exploited in the course of a few decades and abandoned completely during the Thirty Years' War at the latest.

See reviewed sample study 2.

Crafts (Julia Bruch)

In premodern times the secondary sector, identified in economic theory as the sector which produces goods from raw materials, played an elemental role beside the bigger primary—agricultural—sector. Craftsmen and craftswomen dominated the producing of goods in premodern society. They combined their labour energy with (raw) materials or natural resources for production. The concentration of capital was minimal in premodern times. Most products were handmade articles, generally produced single-handedly by masters in workshops, or with a few apprentices and assistants. Unlike self-sufficient peasants, who produced goods for their own supply, craftsmen and craftswomen were normally specialised in one work process (Cipolla 1976: 112; Malanima 2009: 203–4).

Craftsmanship can be found in towns but there was also craftsmanship in the rural environment, mostly carpenters, cartwrights and smiths. These crafts were needed in the agricultural context and diversified especially during the sixteenth century. Most research focuses on crafts in towns, a fact reflected in this chapter.

In the Middle Ages, a profession creating goods by working with knowledge and tools on rough materials (such as baker or cooper) or recycling materials (*Altgewänder*) is called a craft. Someone who maintained goods can be called a craftsman or woman (e.g. tinker or mason), likewise someone who provided food (fisherman) and even the 'artisans of the body' (e.g. barber; Cavallo 2007). Characteristics of crafts were small-scale production, handicraft and skill rather than the use of machines as well as the regulation of apprenticeship and a corporate organisation (Reith 2008a). Like most of the research on medieval crafts, this chapter will focus on 'manufacturing' crafts, as Epstein has called them (Epstein 2008: 53). In medieval society, there were also crafts associated with the third sector, like that of the barber (see section "Services" below).

The history of premodern craftsmanship can be described either as the history of guilds or as a dynamic history of innovation, specialisation and differentiation. In this chapter both narratives will be followed.

Guilds

The majority of research on crafts and craftsmen and craftswomen is carried out within the framework of with research on guilds as their typical form of corporation. Therefore, it is difficult to give a definition of crafts excluding guilds. Guilds are organisations of craftsmen and craftswomen and merchants (for the particular case of merchant guilds, see Gelderblom and Grafe 2010 and Chap. 4). Guilds were a sworn association of members similar to other medieval corporations. Guilds can be described as institutions (Epstein 2009; Pfister 2008; see section "Transaction Costs and Institutions" in Chap. 2) or as social groups (Heusinger 2009: 29). Usually, guilds had written statutes establishing their constituting rules and norms; for instance, they regulated aspects such as the conditions of membership and apprenticeship, the quality of their products and the election of the guilds' masters. Heusinger identifies the following four main functions of guilds within German cities: "professional representation, religious and charitable service, political participation and tasks of defence" (Heusinger 2010: 64). Guilds as craft guilds emerged in cities in the eleventh and twelfth centuries (in particular in Mainz, Worms, Würzburg and Cologne; Heusinger 2009: 49).

Research on the economic history of medieval cities in the German-speaking parts of the Holy Roman Empire mostly focuses on two players: merchants and guilds. Merchants and their organisations (see Chap. 4), like trading companies or the Hanseatic League, are often associated with investments, innovation, wealth and power. In contrast, guilds, understood as corporations of craftsmen and craftswomen, are often linked to regulation, cartel formation, rent-seeking and prevention of innovation. This negative connotation originated from Adam Smith and the reception of his economic thinking. “Guilds […] were seen as part of an economic system that had prevented the European economy from realising its full economic potential” (Epstein and Prak 2008a: 1). Epstein was one of the first economic historians who argued against this opinion in 1998. In focussing on apprenticeship and transfer of skills he could show how innovations and technological change took place in workshops and guilds (Reprinted: Epstein 2008). Current research on medieval guilds in German cities now is based on that fundamental study.

Guilds were important social groups in medieval cities and often participated in city governments (*Zunftverfassung*). Recent studies discuss these assumptions primarily by including different kinds of sources besides the statutes of the guilds (*Zunftstatuten*) and by looking at social and political aspects of guilds beside their economic functions. For a survey, see Epstein and Prak (2008b) and Heusinger (2011). Other studies question the roles of craftsmen and craftswomen and guilds in the processes of innovation (Reith 2000) and of proto-industrialisation (Pfister 2008). Additional recent publications concerning these economic players assess the following aspects: political influence (Heusinger 2009; Rogge 1995; Steensel 2016), women in guilds (González Athenas 2016; Heusinger 2016), guilds and their military function within cities (Heusinger 2009), social and spatial mobility (Brenner 2016; van Gassen 2016; Schulz 2016), transmission of knowledge (Holbach, 2001; Reith 2005, 2008b; Schulz 2016) as well as guilds and their culture (Schmidt 2009). A survey concentrating on German literature discusses current research tendencies (Holbach 2016).

While craftsmen and guilds in cities are most relevant in research, there were also corporations of craftsmen in rural areas (Kießling 1998; Ogilvie 1997, 2004; Pfister 2008).

Specialisation and Differentiation

As previously mentioned, craftsmen and craftswomen produced goods by combining energy and (raw) materials, and were normally particularly specialised in one working process. Such working processes tended to be very complex, and included a lot of different steps until the product was finished. In late medieval times, many craft branches subdivided these production processes. This differentiation of the working process was accompanied by the specialisation of workers and a division of labour.

With the process of urbanisation (see section "Urbanisation" in Chap. 2), the number of artisan producers increased, and it also promoted professional differentiation and specialisation within late medieval cities. In addition, long-distance trade relations and economic ties favoured a supra-regional division of labour. While the refinement of the products often remained inside the city walls, the extraction of raw materials and the preparation of semi-finished products were increasingly shifted to the surrounding areas. There, division of labour had also successfully taken place (Holbach 1994: 13–5). Research on this topic usually promotes the city as the main driver of development, but Mitterauer has already pointed out that specialisation and differentiation of work—and thus a greater division of labour—were also apparent in rural areas without urban impulses (Mitterauer 1992: 13–32). He distinguishes between regional division of labour, local division of labour and intra-family division of labour.

The interaction of towns—where goods were produced, and the final products were sold within new (mass) markets—and countryside—which supplied raw materials—frequently created rural industry or so-called proto-industry (see section "Commercial Revolution" in Chap. 2). The cultivation of flax and the production of linen (e.g. in Upper Swabia and Northern Switzerland) can serve as examples. In areas of rural industry, for instance, crops for textile production were cultivated. In proto-industrial areas, the entire landscape (town and countryside) was shaped by the demands of proto-industrial production (Scott 2002: 91–3).

In contrast to the crafts, the proto-industry produced goods for export to other regions rather than for local markets. It was usually concentrated on a particular branch. Proto-industry can be found throughout Europe; in some parts of the Netherlands as early as 1500, in other regions it flourished in the seventeenth and eighteenth centuries. Most of the proto-industries belonged to the textile industry, but it also extended to regions with mining and metal processing, and later on glass, wood, clay, straw and so on (Ogilvie 1997: 1–3). Mendels invented the term proto-industry in his work on the region of Flanders (Mendels 1970). The theory of proto-industrialisation claims that the introduction of this type of production brought about profound changes in demographics, economy and society. With the relocation of production to the countryside, structuring it as proto-industry, the urban institutions, which had previously regulated production, and the rural institutions, which had governed demographic behaviour, were destroyed. In effect, this led to a tremendous increase of population which demanded further proto-industries. These developments evolved into a "self-sustaining spiral which ultimately generated the supplies of labour, capital, entrepreneurship, agrarian output, and foreign markets required for factory industrialisation" (Ogilvie 1997: 2). Mendels' theory fell on fertile ground. Based on the proto-industry theory, the concept of 'industrialisation before industrialisation' was discussed. It was interpreted as a step on the course to capitalism (Kriedte et al. 1978). Ogilvie critically questioned the impact on social institutions such as village communities, guilds and merchant companies that had previously been ascribed to proto-industry. Therefore, the interaction between proto-industry and social institutions must be considered individually for each single case. Also, the aforementioned development from agricultural society to proto-industry to capitalist society, through differentiated studies, suffers distractions (Ogilvie 1993; see section "The Emergence of Capitalism" in Chap. 2).

Epstein and Prak reach similar conclusions: They suggest that proto-industry located mostly in rural areas stood beside guilds as the urban form of organised work in late medieval Germany. However, regional guilds dominated proto-industry through the majority of the German-speaking regions and the rural production was mostly linked to urban production (Epstein and Prak 2008a: 20).

From a socio-economic point of view, peasant families for example started to work in textile production in order to provide an additional income, particularly in areas with low fertility (Malanima 2009: 206). Huang provides a good example of a study focussing on textile production by using the concept of proto-industry while being unaware of it (Huang 2015).

Furthermore, as a precursor of proto-industry, another form of organisation, the so-called putting-out system (*Verlagssystem*), is discussed: here the production took place in family workshops, but included a more structured division of labour. Separately from the individual steps of production, a merchant coordinated the craftsmen's and craftswomen's works as an entrepreneur. He bought the raw materials and organised their processing by craftsmen and craftswomen. "Putting-out industry is a sort of network of numerous independent small workshops. The merchant-entrepreneur is the director of this kind of scattered manufacturing process" (Malanima 2009: 205–6, quotation 206). Before 1600, the putting-out system mostly remained in towns. Following Scott, it arose from the fustian manufacturing which existed since the late fourteenth century. Fustian (*Barchent*) was made of linen (warp) and cotton (weft). Linen could be cultivated north of the Alps, whereas cotton needed the climate of the Mediterranean area. These facts led to long-distance merchants being involved in fustian production, and finally inventing a new form of organisation (Scott 2002: 97). Putting-out did not only organise work in a more rational and effective way in order to produce for the mass market, it also endowed peasants with citizen's rights, introducing them to urban jurisdiction (*outburghership*; Scott 2002: 95). Towns and their hinterlands were brought together. Proto-industry did potentially involve putting-out by including merchants as entrepreneurs and sellers of the products.

Nuremberg and the surrounding area can be described as the most 'advanced industrial region' in Germany. The metalworking crafts in particular must be stressed. The iron ore was mined in the Upper Palatinate, where it was processed in the metallurgical centres of Sulzbach and Amberg, and finally brought to Nuremberg. The city's crafts pioneered in the technique of tin-plating iron (*Verzinnen*) in the fourteenth century—beside Wunsiedel (Fichtelgebirge)—and wire-drawing (*Drahtzieherei*) in wire mills from the fifteenth century onwards (but not completely automated until the late sixteenth century). Nuremberg fulfilled the function of the 'region's economic powerhouse'. The city "sought less to control all stages of the metallurgical process than to secure supplies of semi-finished ironware through recourse to putting-out, which it could then manufacture into specialised finished goods" (Scott 2002: 110). Crafts organised by putting-out in Nuremberg (mentioned in the records of 1535) included the making of hooks, blades, compasses, knives, needles, wire, armourers and tinsmiths, alongside with clothing trades like fustian-weaving, glovemaking and printing. Nuremberg traders controlled local production (in its hinterlands): the supply of raw material and fabrication of semi-finished goods in the country and smaller towns around Nuremberg, the fabrication of the finished good and organisation of the export to foreign markets within the city (Scott 2002: 110).

Other important and very dynamic industrial regions of premodern Germany were Saxony and Thuringia (cultivation of woad and production of dyestuff), and the Süderland (Mark in western Sauerland) near Cologne (metalwork; Scott 2002: 109).

Knowledge and Innovation

Schumpeter's definition of 'innovation' (first published in 1912) has had a distinct impact on economic history up until today (see, e.g. Malanima 2009). Innovation, in Schumpeter's theory, is discontinuous and results from a new combination of production factors: the making of a new product or a product with a new quality, the introduction of a new method of production, the exploration of a new market, the conquest of a new source of supply for raw material or unfinished goods, and the reorganisation of the branch of production (like establishing or deconstructing a monopoly; Schumpeter [9]1997: 100–1).

For premodern times, this definition is not unquestioned. Most medieval and early modern innovations—maybe with the exception of printing—were anonymous and happened in small steps in workshops during daily work (Epstein 2008: 52). Epstein and Prak emphasised this understanding of innovation by using the term 'micro innovations' in contrast to 'macro innovations' like printing (Epstein and Prak 2008a: 5). Habitually, there have been many forces behind innovation, like the yearning for a better life, the hope to produce more crops in order to feed more people, more, better, cheaper (or more luxurious) clothes to dress people, the aim to minimise the use of people or animal power by using wind, water and solar energy instead, the wish to do things more efficiently (e.g. with less workers), the prospect to get richer, and not least, the wish to wage war successfully (Epstein 2009: 190–2, 210).

According to the textbook story, that the Black Death increased the speed of technological innovation (Epstein 2009: 213). This understanding is based on Adam Smith's idea of apprenticeship organised in guilds. Such a form of training with entry barriers, he claimed, encouraged nepotism, prevented a free labour market and hindered innovation by excluding intelligent people. With the Black Death and the losses of such a large quantity of people, the labour market became more open and there were numerous new opportunities (Epstein 2009: 214). However, on taking a closer look, it becomes apparent that many of these innovations had begun well before the plague, and consequently labour shortages were not the only reason for this development (Epstein 2009: 213–4). There were further events with a far-reaching effect which possibly triggered innovations. Epstein names the loss of the crusader states and the following crusades in Europe (in the North and Northeast against Poles, Russians, Prussians; in Iberia against Muslims; in the Southeast against Ottoman Turks; and in France against 'heretics'), the Hundred Years' War (fourteenth century till 1450s), the Papal Schism, the Hussite wars (fifteenth century) and the Peasants War (1525; Epstein 2009: 223–249). For the German-speaking lands, the changes in city councils (inclusion of guilds in the fourteenth century and exclusion of guilds in the sixteenth century), the princely state-building (*Territorialisierung*) and the 'confessional age' in the wake of the reformation should also be taken into account.

Cipolla divides technological innovation into three categories: firstly, techniques borrowed from others (e.g. compass, harness or paper); secondly, technologies which were invented abroad (e.g. wind mills) or which had been known for a long time (e.g. water mills) and changed to fit in European conditions; thirdly, independent innovations (e.g. eye glasses or clocks). Technological innovation in medieval times proceeded slowly and resulted from tiny countless improvements in everyday work without having been influenced by theoretical thinking (Cipolla 1997: 8). Technological change and new developments affected people in premodern times differently from today, as "tradition remained strong and the pace of change imperceptible" (Epstein 2009: 190). "With a few rare exceptions, the common theme in medieval technology will be the accomplishments of nameless tinkerers making small improvements in existing ways of doing things" (Epstein 2009: 191). The invention of new techniques costs money. The entrepreneurs embody the transition of innovations into the economy. However, it is generally difficult to distinguish between innovation and replication, not only for premodern times (for discussion about the difficulty of this term see Whaples 2013).

Historians do not question that a lot of important innovations took place in late medieval and early modern times, which had immediate effects on most people's everyday lives. Where had they been launched, though? To answer this question, economic historians have looked at education, apprenticeship, and the labour organisation of medieval workshops.

It is emphasised that craftsmen and craftswomen were skilled, trained and educated for their special jobs. Their education and training had been acquired in workshops, working as an apprentice for a master, and learning by experience (Malanima 2009: 203–6). Van Zanden also emphasises the aspect that education was formally organised by the guild system (van Zanden 2009: 165–6). Transmission of knowledge is a crucial part of the success and survival of every workshop. Modern researchers differentiate between propositional (explicit, overt) and tacit (implicit, covert) types of knowledge. It is well known that propositional knowledge can be learned from text books, while tacit knowledge can only be gained face-to-face. Experience-based knowledge, for instance, can be transmitted as hands-on training during an apprenticeship and was spread by journeymen and journeywomen on their journeys and migration as trained workers (Epstein and Prak 2008a: 5–7; Epstein 2009: 212). "Over time, social forms like the guild system of education sustained these improvements and institutionalised the process of passing best practices down from one generation to the next" (Epstein 2009: 197). The most important publication on the question of innovation in crafts—edited by Epstein and Prak—focusses on craft guilds, and assembles contributions by all the foremost experts on European premodern guild (Epstein and Prak 2008b).

To explain technological change, it is necessary to look at the process of innovation in addition to the transmission of knowledge, since innovation as well as common skills and knowledge must be transmitted. For technological change to become effective, innovations have to be widely spread. In this context, the connection between transmission of knowledge and mobility is discussed. Two aspects are at the centre of attention: firstly, new technologies or innovations in the process of crafting goods were carried to different parts of Europe by travelling craftsmen and craftswomen; secondly, know-how from moving craftsmen and craftswomen might have been combined with local traditions, so that innovation could have happened in this way (Epstein and Prak 2008a: 16–7). Guilds contributed to new technologies and were at the core of their diffusion. However, guilds might have been somewhat biased when it comes to labour-saving innovations as their members might have been affected negatively. But in towns, where political guilds included merchants and entrepreneurs, this strategy seems counterproductive. There, guilds are very likely to have been the main supporters of innovations (Epstein and Prak 2008a: 18–9).

As a conclusion: "[…] most technological change in pre-industrial Europe was the result of incremental, micro improvements, discovered more or less unintentionally by craftsmen practicing their trade. In other words, technological change and progress was the unintended outcome of craftsmen doing about their normal business, which was to produce industrial products to the best of their abilities" (Epstein and Prak 2008a: 17–8). This result contradicts Adam Smith's prejudices against guilds.

The history of technological change could be written either as a history of techniques in isolation or in interaction with economic, political, cultural and social history (Cipolla 1997: 14). It is difficult to write a history of technical improvement with the surviving records: New technologies were seldom mentioned, the mostly nameless inventors seldom wrote down their thoughts on, or ways of doing, things, eye witnesses did not focus on new techniques either, and illustrations of new tools or buildings (e.g. looms or mills) are rare and are not necessarily true to reality. Premodern tools were often made of wood which is less likely to survive in meaningful condition than other materials (Epstein 2009: 191). All this changed during the course of the fifteenth century: The latest technological innovations were to be described and neatly collected by historiographers like Giovanni Tortelli and Polydore Vergil alongside with philosophers like Francis Bacon and writers like Antonio Persio (Cipolla 1997: 9).

Another approach to tell a history of innovations is by referring to the history of the institution in which the innovations had happened (see section "Transaction Costs and Institutions " in Chap. 2).

See reviewed sample studies 3, 6, 7, 8, 9, 11, 12, 14, 16, 20, 30, 32, 37.

Services (Julia Bruch)

The services sector is concerned with the production of immaterial goods. Services and their contribution to economic growth are very important in our society today; but this field has received little attention in premodern research (Gilomen et al. 2007b). The service sector has a definition problem, often those sectors of the economy that do not fit into the first (agriculture and mining) or the second category (craft, manufacturing and trade) are simply grouped together (Gilomen et al. 2007b: 12–3). However, we deem it important because services of all kinds constitute important preconditions of market exchange: financial services, insurance, transportation and transport services, communication, finance, documentation, generating knowledge and disseminating knowledge and also spiritual services. Producers include lawyers, notaries, messengers and transporters, scribes, teachers, consultants, servants as well as clerics. Financial services and financial intermediaries, however, are topics of the chapter on money and credit (see Chap. 5).

A major problem of the historical analysis of this sector is that services are very difficult, if at all, to quantify. Furthermore, the proportion of unpaid services in this area is particularly high (Carreras 2007). Important to mention is the volume of services in Switzerland, which spans the period from the fifteenth to twentieth centuries and includes good ideas for follow-up studies (Gilomen et al. 2007a). Two of the articles are particularly exemplary and noteworthy: the first deals with the '*Läuferamt*, an urban messenger in late medieval cities (Hübner 2007), and the second is about legal and medical consultants at the Hohenzollerhof (Baeriswyl-Andresen 2007). Both articles impressively show that different kinds of services were needed both in the city and at the courts of the nobility.

See reviewed sample study 15.

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4

Introduction into the Study of Markets

Eva Brugger, Angela Huang, Ulla Kypta, and Mark Spoerer

The three introductory chapters on how to study production, market, and money and credit provide frames for the reviewed sample studies in Chaps. 6, 7 and 8. They offer some guidance in finding your bearings in the jungle of concepts and debates which makes premodern economic history such an interesting, but challenging subject to study. Each chapter structures important and current debates in the field and explains the basic concepts used in these discussions. Most debates concern the premodern European economy in general. Whenever possible, we refer to

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corresponding studies for the Holy Roman Empire. We point to classic works as well as to newer studies but offer no exhaustive compilation of all the research done in the area.

We recommend reading one of the handbooks, such as Epstein (2009), Malanima (2009) or, for the Holy Roman Empire, Scott (2002), alongside this book to gain a deeper understanding of the processes and phenomena that shaped premodern production, market, and money and credit.

In premodern times, market exchange was not the most common form of exchange. The premodern society was to a large degree an agricultural society which was not highly commercialised (Cipolla 1976). Alternative forms of distribution and exchange predated and were at some point supplemented or substituted by market exchange: for instance ritual exchange, which often took place within associations, families or kin, such as gift or dowry; or unidirectional, hierarchical forms of redistribution such as taxes, charity, plunder, theft or ransom (Cipolla 1976, 19, 21; Persson 2010, 29, 79; van Bavel 2016, 1).

Although market exchange was by far not the only form of exchange practised in premodern times, it is the form that is most frequently studied and most hotly debated in historiography. This mechanism of exchange lies at the heart of the grand narratives concerning the market in premodern times. Economic, cultural and social historians all tell the story of the market between c. 1300 and c. 1600 as one of an increase in market exchange leading to a market economy and a consumer society. Adam Smith started the modern discussion of the topic, suggesting that market exchange stimulates economic growth: Who wants to or has to participate in market exchange has to offer something that other people want, and she has to refrain from consuming the good herself. Thus, she must raise her productivity or specialise her efforts in a certain product. In return, she can obtain goods she could never produce herself. According to this classical assumption, markets set incentives for division of labour, specialisation and inventiveness, all of which promote economic growth (Hatcher and Bailey 2001, 124). Adam Smith's hypothesis, though still much cited, has been challenged a number of times during the past 250 years, and discussions on the advantages and disadvantages and the specific characteristics of markets still continue. The emergence of a market economy in Europe is highlighted as a pivotal development which shaped Europe's path to modern capitalism and industrialisation. The first part of this introduction recounts these narratives of commercialisation and the emergence of the market economy.

However, in the view of the premodern contemporaries, a market did not mean a certain mechanism of exchange, but rather a specific place and an event where goods as well as gossip were exchanged. The study of premodern markets thus does not only revolve around the emergence of a market economy, but also aims at finding out how marketplaces looked like and when markets took place, who frequented them and how rules and norms shaped market activities. The second part of the introduction outlines how these elements of the market are discussed in current research. Both aspects of the study of markets are of course closely interrelated: If one wants to find out how and when exchange via the market increased, one has to study the concrete exchange on physical marketplaces, its frequency, the people exchanging goods on the markets and the rules and norms that fostered or hindered market exchange.

This chapter focuses on markets for goods as the most common form of market: Such markets for commodities have almost always existed. Markets for land, labour and capital, on the other hand, are comparatively rare phenomena throughout history (van Bavel 2016, 1). Commodity markets are discussed in this chapter, whereas the specific premodern forms of exchange for land, labour and capital are being dealt with in the other chapters on production and money and credit.

Europe, c. 1300–1600: Commercialisation and the Market Economy (Angela Huang, Ulla Kypta)

The study of markets in premodern Europe tells the story of how a society whose exchange took place on markets, among other forms of exchange, was transformed into a society which was shaped by market relations. Researchers agree that the emergence of a market economy rested on an earlier development called commercialisation: If goods are more frequently exchanged on the market and not via any other form of exchange, they become commercialised (Malanima 2009). In the west of

Europe, this process began in the tenth century, with a boom phase in the thirteenth century that brought about a notable growth in market exchange. In this period, more and more goods were being traded via the market.

It is quite difficult to assess what share of economic activities was distributed via the market. Most studies focus on urban markets, even though about 80 per cent of the population were working in agriculture—a part of society for which source material is very scarce. Commerce and consumption can often best or only be studied indirectly. Dijkman, for example, assumes that a commercial society can be recognised by a high ratio of urban to rural population, the widespread presence of non-agrarian activities in the countryside and a highly commercialised nature of agriculture (Dijkman 2011, 3). Furthermore, inventories are often analysed to get a grasp of premodern consumption (Overton et al. 2004, 170). An indirect view on consumption is also offered by the adaption of the 'Worlds of Production' (Storper and Salais 1997). Here, consumers are not seen as individuals or households, but groups with certain conventions in their choice of product. Studying the organisation and design of production (Jeggle 2011) and the composition of the market thus offers indirect evidence for the degree of consumption that is handled via the market.

A commercialising economy can merge into a market economy. The standard textbook story (Malanima 2009; Persson 2010), in the tradition of Adam Smith, describes the development of a market economy as a linear process: "The exchange of goods and services facilitates the division of labour, specialisation, inventiveness, and the accumulation of capital, and all serve to raise productivity and promote economic growth" (Hatcher and Bailey 2001, 124). For the Middle Ages, the story goes as follows: During the twelfth and thirteenth centuries, population was growing, but increase in demand was not checked by a Malthusian dynamic (see section "Population, Demography and Economic Growth" in Chap. 2), because supply increased as well: The danger of diminishing returns on land and labour was countered by a rising number of towns (see section "Urbanisation" in Chap. 2) as well as the emerging proto-industrial production which generated new jobs and ensured that the economy could grow. Specialisation and differentiation of work processes, new knowledge and techniques, enhanced productivity. A growing population settled closer together, thus access to markets was getting easier, transactions costs were decreasing (see section "Transaction Costs and Institutions" in Chap. 2), specialisation became more profitable and economies of scale could be realised. All these changes were cumulative and beneficial, according to this story, and thus stirred the European economy onto a path of steady progress (Hatcher and Bailey 2001, 125).

In contrast, van Bavel points out that the path to a market society was not a linear, but a cyclic development (van Bavel 2016). Market economies are defined as those societies that predominantly use the market as their exchange system not only for output but also for land, labour and capital. Van Bavel argues that market economies such as early modern England were not self-reinforcing, but on the contrary undermined their own foundations. He underpins his argument with empirical examples from Babylonia in the second millennium BC, classical Athens to the Yangtze Delta at the beginning of the second millennium AD and the United States in modern times: Growth always petered out after a few centuries. Furthermore, his account regards market economies not as the goal every society should strive to reach, since he finds no conclusive evidence that market economies showed higher growth rates over longer periods of time. In his view, market economies do not so much foster growth as stabilise the power of political elites.

Another not very optimistic story of the emergence of the market economy comes from Polanyi (1944). In his famous book *The Great Transformation*, he claims that the premodern economy was shaped by three forms of exchange all different from a market economy: redistribution, reciprocity and house-holding. In a redistributive system, a central entity such as a feudal lord was in charge of production and trade and distributed the goods according to his will or plan. Distribution was organised hierarchically. Reciprocal exchange took place between social groups such as families or tribes. Households produced textiles, food and tools and distributed them between the family members. These three forms could exist alongside each other. Markets also existed, but only for supplying those goods which the other, dominant systems of exchange could not provide. The 'great transformation' then changed this premodern system into the modern market economy, which together with the modern nation state formed the market society. Polanyi stresses that this development cannot be described as a liberal process of freeing the market from constraints, bringing wealth to all, but rather as a transformation pushed through by the modern state that thereby uprooted the people from their traditional social relations, their 'habitation'.

In sum, researchers agree that during premodern times the European economic system underwent profound change, and that a market economy emerged at least in parts of Europe. Indeed, as Masschaele puts it: "research on markets has effectively transformed the field of medieval economic history, directing scholarly attention away from demography and toward commercialisation as the primary explanatory model for change in the period" (Masschaele 2002, 383).

In general, market exchange is defined as the matching of supply and demand. Markets thus coordinate wants through the forces of supply and demand. Some definitions of market exchange add specifications on how the matching of supply and demand has to happen: There have to be enough different buyers and sellers so that exchange can be regarded as impersonal, that is: the way the transaction is carried out does not depend on the specific person buying or selling the product. Market exchange is combined with the use of money (Persson 2010). Van Bavel summarises this view: "Generally […] markets are defined as systems for exchanging and allocating resources by way of monetary transactions, with prices primarily determined by the forces of supply and demand, and with multiple, competing buyers and sellers who are mainly geared towards maximising their own utility or profit" (van Bavel 2016, 3). Prices as a measure of the value of the exchanged products are thus an important element of market transactions.

Furthermore, prices indicate to what degree markets were interconnected. If transaction costs become so low that markets relate more closely to each other, prices converge. These markets are called integrated. Integrated markets are supposed to have fostered growth. Prices of grain are the most common indicator used to study the degree of market integration (Epstein 2000; Galloway 2000; Van Zanden 2009, 20).

See reviewed sample studies 21, 27, 43.

Price Data as a Historical Source (Mark Spoerer)

Whereas the importance of prices for the analysis of premodern markets is not under debate, constructing meaningful price data is. The price is the quantity of payment that one party (the buyer) gives to another (the seller) in return for one unit of a good or a service. Evaluating prices, however, poses a lot of challenges. The quotation of a single price is in most circumstances meaningless. The price acquires meaning only when compared horizontally to that of other goods or services, which results in relative prices, or vertically along the time axis, which results in a price series. The price is not necessarily expressed in some form of currency; sometimes quantities of other goods or services could be quoted as well (e.g., three pigs for a cow). This kind of transaction, barter exchange, does not require currency and is thus found only in regions where transactions have not yet been monetarised (or where the parties involved wanted to avoid sales taxes). The price for a unit of work (typically an hour, a day, a week, a month, a season or a year) is the wage rate, and the price for a unit of money is the interest rate. Wages and interest rates are discussed in the chapters on production and money, respectively.

For historians, usually only relative prices are of importance. Probably the most popular relative price among (economic or social) historians working on the Middle Ages is the real wage, that is in the most simple form the ratio of the wheat or rye price per unit of fine gram silver per hour worked, usually for a mason or a day labourer. The idea is that a series of this relative price allows inferences on the development over time of the living standards for the lower half of society (see section "Great and Little Divergence" in Chap. 2).

There are, however, many caveats, and the following list is far from exhaustive. First, in the Middle Ages only a small fraction of goods, services and hours was exchanged via markets. Peasant households consumed most of what they produced themselves, and most of what they had to hand over to nobles and the church was consumed by them and their courts or abbeys. Only a small fraction of the harvest found its way to what we call a market. Second, why should the parties involved in market transactions record the prices they paid or earned? This was the case only when some bookkeeping was necessary, typically in institutions where the acting agent had to justify his market transactions to his principal. This may have been the city council, the board of a charity institution or the principal of a trading company. Apart from account books, another source are market reports, often compiled by the city administration. Third, whether the price paid (and recorded) by a large consumer like a city or a hospital was the same as that paid by a day labourer is unclear. Fourth, whether the price one can find in market reports compiled by the city administration was the (correctly calculated average) actual price or just a norm, for example an upper limit for the price that could be asked for, is often not clear. And, fifth, in premodern times prices are in effect local. Insufficient transport infrastructure and ineffective means of transport increased trading costs, and so market integration is supposed to have been weak until the nineteenth century.

These and further caveats explain why many premodern historians are reluctant to pay attention to prices at all. The reason why economic and social historians do, is simply the lack of an alternative. If history is (also) about how people lived in earlier times, then a flawed measure, if interpreted as properly as possible, is better than none at all. Until the mid-nineteenth century, few historical price series were published. Only after the 1850s did authors, often economists influenced by the Historical School in Germany and elsewhere, start to publish price series on a larger scale. Probably the most famous examples are the *History of Agriculture and Prices in England* by Rogers (1866–1902), who cites commodity prices since 1267, and *Prices and Wages in England from the Twelfth to the Nineteenth Century* by Beveridge 1939.

See reviewed sample studies 22, 28, 32, 36.

The End of the Beginning: The Consumer Revolution (Eva Brugger)

Over the centuries, more and more goods were being traded via the market. A commercialising society also brought with it the consumer as an important protagonist of the market economy. Commercialisation and consumption are closely related concepts, as consumption is commonly understood as buying goods via the market. When with a predominant market economy most goods (and even labour, land and capital) were now exchanged via the market, this prompted yet another premodern revolution that marks the end of the period that this book covers: the consumer revolution that transformed European economic culture.

The consumer revolution rested on a fundamental change in moral attitudes: “A chorus of new voices defended man’s appetite for more as the impetus of human advancement. Here was a fundamental transformation, overturning centuries of received wisdom: less is more gave way to more and more. Once regarded as a drain, to be checked and kept under control, consumption was now defended as a source of wealth” (Trentmann 2016, 54). By studying contemporary defenders of luxury, such as Georg Marie Butle-Dumont, Bernard Mandeville, Voltaire and David Hume, Kwass explores how cultural transformation “created new taxonomies to order an expanding world of goods” and accompanied the rise of consumption in France (Kwass 2003, 87).

When exactly this fundamental change happened is highly controversial. McKendrick, Brewer and Plumb proclaimed the birth of the consumer society in England in the third quarter of the eighteenth century. They entangled economic growth before industrialisation with expanding market consumption (McKendrick et al. 1982). Subsequently “[a] race got under way, as one after another claimed a ‘consumer revolution’ for their period… Stuart historians have spotted it in seventeenth-century England, Renaissance scholars traced its roots to fifteenth-century Florence and Venice, while medieval historians detected its embryonic stirrings in a new taste for beef and ale and playing cards. Scholars of China added that the Ming dynasty (1368–1644), too, had a cult of things and deserved to be recognised as ‘early modern’” (Trentmann 2016, 22). Mukerji locates the beginning of a “hedonistic culture of mass consumption” in the fifteenth and sixteenth centuries (Mukerji 1983). Welch adds an Italian Consumer Revolution in the fifteenth century: Her study in cultural and art history analyses how female and male actors from all social classes bought and sold goods in streets and shops during the Italian Renaissance (Welch 2005; see also Goldthwaite 2009).

In the 1990s, de Vries contributed significantly to the debate on changing consumer practices in premodern Europe. By focusing on

Dutch households in the seventeenth and eighteenth centuries, he sheds light on women (and children) as economic agents and he supplied a satisfying answer to the question where increasing income in premodern Europe derived although wages stagnated (de Vries 1994): "Driven by a combination of commercial incentives (changes in relative price, reduced transaction costs) and changes in taste, this 'industrious revolution' emanating to a substantial degree from the aspirations of the family, preceded and prepared the way for the Industrial Revolution" (de Vries 1994, 255f). Based on Gary Beckert's *Theory of the Allocation of Time*, de Vries tracks how the increased longing for material consumption led male and female workers as well as children to work more. He shows that the income of household rose though day wages stagnated (de Vries 1994, 73–121).

In other words, the participation of women (and children) on market-based economies, less social regulations and the social acceptability of market consumption determine and characterise premodern consumer revolutions. The participation of women in market-based economies and the possibility to allocate time to wage-paid working are attached to institutional preconditions that permit married and unmarried women to work outside the household (Ogilvie 2010, 290). The institutional controls of social regulation differed in Europe as research on social disciplining, guilds, communities and women's history have shown. The Low Countries, England, Northern France and a few other enclaves witnessed an earlier and more significant relaxation in institutional regulation than was common in the central, Nordic and Southern parts of the continent (Ogilvie 2010, 297). This asynchrony in social control explains the asynchrony of economic development in Europe. Only with the permission for women to work on market-based economies and the acceptability of market consumption consumer culture could emerge.

The debate about increasing input of labour and the degree of market work, leading to more spending money, has given great impulses to the field, also leading to new strands in the debate like that of a 'retail revolution' in the seventeenth century (van den Heuvel and Ogilvie 2013). Works on the medieval consumer in Germany are still mostly focused on retail traders, with the exception of Hammel-Kiesow (1999), who tries to find out something about end consumers, and a recent edited volume, which analyses towns whose main contribution to the economy was neither production nor distribution, but consumption (Selzer 2018).

More common so far are more general studies of changing patterns of consumption based on studies of real wages (Allen 2001; Cipolla 1976). Historically high real wages, it is claimed, allowed the development of a medieval 'consumer economy' (Kowaleski 2006). Studies on consumerism before the Industrial Revolution focus on the consumption of the nobility (Selzer 2008; Ertl and Rothmann 2015). Most studies focus on the period from the seventeenth century onwards and on the Netherlands and England (such as Overton et al. 2004; Rosenband 2016; Berg 2005). The material, institutional and political availability of goods fuelled the consumer revolution in these states, especially in the second half of the eighteenth century (Ogilvie 2010, 288). The consumer revolution thus leads the way to the modern consumer society.

See reviewed sample studies 22, 37, 38, 40.

Elements of the Market (Angela Huang und Ulla Kypta)

During the time c. 1300–1600, which forms the core of this book, the transformation of the European economy we outlined above had only begun. It took place in many different areas of society. Various marketplaces, a range of different market participants and goods as well as diverse rules and practices of the market within and across economic regions in Europe shaped its economic development. In the following section, we outline different characteristics of premodern market exchange, starting with markets as both physical places and events. We continue with the main types of actors who bought and sold goods and thereby brought the market to life: trading companies, networks of merchants and merchant guilds, monasteries, princely courts and actors on the margin of subsistence. The actions of market participants shaped market institutions and were in turn governed by them: we will therefore finally turn to the discussions on how markets as places, events and mechanisms of exchange were regulated by formal and informal rules, and how social practices and moral norms shaped activities on the market.

Market as Places and Events

When contemporary merchants and peasants referred to the market, they mostly did not mean the mechanism of exchange discussed above, but markets as physical places and events, as in the sentence "Tomorrow I'm going to go to the market." This meant: "Tomorrow I'm going to go to a certain place where at this time of the week or year a market is going to take place." A market as a place can usually be found in a town. It is a venue for trade that is open periodically, a place specialised on exchange, in which buyers and sellers meet (Epstein 2009, 71, 79). Each marketplace looked different, but certain common features of marketplaces can be named (Baeriswyl 2006): Markets were established by seigneurial privilege. A market cross or a Roland statue was erected to symbolise that the town had been given the privilege to host a market. The market either covered a central, often rectangular area of the town, or a certain street served as a location for the market, often called market street until today. Similar products often had to be sold alongside each other: There was one street designated for the fish market, for example, another one for meat, and so on. The space allocated to the market was often quite large and expanded over time, which indicates that market activities were a common and important feature of the life in a premodern town (Masschaele 2002, 389).

Goods were offered from stalls, booths or benches. The town council often allocated certain stalls to certain crafts or trades: Bakers had to sell bread from this booth, cloth had to be sold from that stall and so on. In towns where the town council was not able to regulate market activities quite as tightly, merchants and artisans sometimes sold their goods from their own houses. In such cities, the market was not confined to a well-defined place or street but covered certain areas of the town and took place in commercialised places, for example, the town's gates. Some towns maintained specific warehouses: Foreign merchants had to bring their goods there to pay the customs and could then store the goods and sometimes even sell them directly from the warehouse. Foreign merchants often stayed and stored goods at inns or taverns. At most marketplaces, one could find a water well and a public clock (Baeriswyl 2006). Archaeologists provide valuable information about the layout of marketplaces, the position of stalls and so on (Müller 2017; Rösch 2018).

The premodern market was not only a place to buy and sell goods, however. Masschaele has characterised English marketplaces as "public social gatherings" (Masschaele 2002, 384). News and gossip were shared between market participants. Royal writs as well as ecclesiastical and local proclamations were read out during market times, so that urban dwellers as well as peasants who had come to the market could hear them. Public punishments, both civil and ecclesiastical, were also carried out on the marketplace for everyone to see. Market participants were thus acknowledged as political subjects. It should come as no surprise that markets also served as starting points for rebellions.

In the research literature, the term market does not only denominate a specific place inside the town walls but also the whole town as the place where a market took place (e.g., the market of Cologne). Towns were a crucial prerequisite for market development: They provided not only a space for market activities but also the supply of and demand for specialised goods and services and the necessary regulations governing market activities. The historiography of urbanisation thus forms an important part of the study of markets (see section "Urbanisation" in Chap. 2). Towns were not the only marketplaces: Monasteries and seigneurial seats provided central places as well, allocating and redistributing goods and fostering specialisation. Most researchers, however, focus on towns as hosts for markets.

Markets were not only places but also events that took place on certain days of the week (mostly Saturdays and Wednesdays) or on certain days or weeks of the year. Nearly every town hosted a weekly market. Urban dwellers and peasants from the immediate surroundings of the town exchanged daily necessities here. Most towns also organised periodic fairs. These often took place during the days around a church holiday, for example, Lent in spring or Michaelmas in autumn, since most feudal lords demanded the payment of feudal dues from their peasants on a certain holiday. Thus, the peasants needed a market to sell their products and receive money which they could give to their lord, and the lord could use the money he received to buy commodities on the market. Periodic fairs often attracted not only peasants from a town's hinterland but also merchants from the wider region. Merchants, peasants and artisans exchanged their products here. In contrast to the weekly markets, which were in most cases heavily regulated, the fairs offered a less restricted access. These regional fairs are hard to count. Rothmann reckons that in the Holy Roman Empire before 1500, around 5,000 fairs existed in 1,500 towns (Rothmann 2010). After 1500, the number of fairs in Europe supposedly increased even more (Epstein 1994).

Next to the local or regional fairs, interregional fairs supported European-wide exchange. Interregional fairs were often synchronised so that merchants could go on from one fair to the next. The earliest example of a system of synchronised fairs are the Champagne fairs, which flourished during the thirteenth century. Six fairs, each lasting two months, in the four towns of Troyes, Provins, Bar-sur-Aube and Lagny-sur-Marne covered the whole year. Later on, the fairs of Antwerp and Bergen op Zoom in Brabant took over the role as important places of exchange between Northern and Southern Europe. In Germany, the international fairs of Frankfurt/Main and later Leipzig are considered the most important and have thus received most attention (Rothmann 1998; Brübach 1994). During the Late Middle Ages, interregional trade was carried out not only via interregional fairs but also via some towns where interregional trade took place all year round. In the Holy Roman Empire, such markets mediating between larger economic regions were, for example, Nuremberg, Kraków, Basel, Cologne, Augsburg or Hamburg.

The geographic location was an important feature of a market: It determined who and what would reach the market. To attract regional or even international trade and thus a greater variety of commodities, a market had to be connected to the trade routes that crossed Europe. At best, a market could be reached by waterways, either across the sea or via rivers, since travelling by water was in general less expensive than the journey by land. A market attracted merchants as long as it could offer goods which would make the journey worth their while, for example, if the respective town was the heart of a proto-industrial region that manufactured goods for trade on a large scale at comparatively low cost. Interregional fairs for large-scale trade developed at places where merchants from Southern Europe could meet merchants from the North. In the Late Middle Ages, Bruges and Antwerp served as such points of exchange between the North and the South, since both cities could be reached comparatively easily from the North, South, East and West by sea, rivers and land. During the sixteenth century, Lyon also counted among the important and well-connected markets in Europe, as a study of toll levied on the river Rhône shows (Lang 2015).

The different markets in Europe were interconnected, both hierarchically and geographically: Goods bought on local markets were sold on international fairs, and regional goods bought on one local market were sold at another market in a different region. For example, dairy products from local village markets in Flanders were resold at the international market in Bruges to merchants from Cologne, or herring was bought at the market in Gdansk and shipped on to the markets of Thorn, Krakow or Lemberg (Jahnke 2000). Rothmann reconstructs a hierarchy of markets for Southern Germany: Local markets could be found in more or less every town. Regional fairs took place in Nördlingen, Nuremberg, Zurzach, Linz, Bozen, Ulm, Basel and Strasbourg. Merchants from Southern as well as Northern Germany who wanted to participate in international trade had to go to Frankfurt/Main or Leipzig (Rothmann 2010).

See reviewed sample studies 23, 34, 39, 41.

Actors on the Market

The premodern market can be characterised as a market with a broad range of different market participants: Merchants traded by themselves, formed partnerships with other merchants or acted as part of a trading company. Craftsmen and peasants substantially gained importance as market participants throughout the centuries covered here. Actors on the margin of subsistence, such as pawnbrokers and retail traders, made use of the market to better their living. They were not yet excluded from market activities (Fontaine 2014). Monasteries played an important role as mass-producers who sold their goods on a nearby market and thus connected town and countryside. At the princely courts, conspicuous consumption was invented, and the precious foodstuffs, cloths and other goods needed to impress people had often to be bought via the market. Most studies on the actors on the market focus on merchants, however. We do not know much about the other actors who only frequented the market from time to time and engaged in a number of other activities to earn their living (see Chap. 3). The final consumers are also difficult to study for premodern times (see section "The End of the Beginning: The Consumer Revolution" above).

Every actor on the market who did not only trade for himself had to face a principal-agent problem. It arose if someone wanted to do more than one business operation at the same time, especially if he wanted to do business at more than one place at the same time. If an actor wanted to buy or sell goods on a specific market—say: if he wanted to sell wax in Bruges or buy spades in Nuremberg—he didn't necessarily travel to Bruges or Nuremberg himself. According to one of the most influential grand narratives of premodern economic history, merchants became sedentary during the Commercial Revolution of the High Middle Ages, and hence stopped travelling across Europe with their goods (see section "Commercial Revolution" in Chap. 2). Instead, they relied on a representative, who sold the wax or bought the spades for them. The principal cooperated with or employed an agent. The principal-agent problem could arise for every kind of market actor, but it was most urgent for merchants who earned the main part of their living by buying and selling and therefore often engaged in a number of simultaneous trading activities. A merchant thus had to deal with the problem of how to ascertain that his representative did what he wanted him to do. Trading companies, on the one hand, and networks and partnerships on the other hand, offered different solutions to this problem.

Trading companies are probably the economic actors that feature most prominently in German research. When research on business organisations began to gather momentum at the end of the nineteenth century, researchers set out to find the origins of the *Offene Handelsgesellschaft*, a form of disclosed company in today's German law. When a merchant was part of a disclosed company, he made it clear to his business partners that he was trading not only for himself, but also on behalf of other merchants. In contrast to that, in an undisclosed cooperation, his association with other merchants was not made public. Even though undisclosed partnerships were the most common form of cooperation between merchants, the disclosed company has stood at the centre of researchers' attention. Weber found its beginnings in medieval Italy (Weber 1889). Even though he only wrote a seminar paper about this, his classification of different types of companies became highly influential. Weber's teacher Goldschmid proposed the hypothesis of universalism (*Universalismusthese*), which argued that all European merchants faced similar challenges and in order to cope with them, came up with similar solutions (Goldschmidt 1891). This hypothesis was not tested, but regarded as confirmed and applied: Weber put his findings from Pisa, Genoa and Florence into ideal types, and researchers in his wake tried to fit their findings from all across Europe into Weber's categories and identify *compagnie* (every partner worked), *commende* (partners either worked or contributed capital) and *societates maris* (not everyone worked, but everyone contributed capital).

For a long time, a large part of German research on trading companies has been focused on a few prominent, mostly Southern German trading companies that were supposed to consist of a large number of partners and employees who staffed their outposts in several European cities and could engage in spectacular business activities: To name just the two most famous examples, the Fugger family lent money to kings and the emperor (besides engaging in a wide variety of trading and mining activities), and the Welser imported sugar from the New World. Both stem from Augsburg, where several such companies were based. Their principal-agent relations are supposed to have been organised hierarchically: The partners of a company employed servants who managed the business at the different outposts of the company. They carried out instructions and had to account for their actions in regular intervals. The partners themselves could also represent their company away from home, and they were also supposed to report back to headquarters. The solution for the principal-agent problem in Southern Germany thus supposedly lay in supervision and control of the agents (Hildebrandt 1997; Lutz 1976).

This focus on large trading houses has recently been challenged. If one tries to find empirical evidence for this form of business in the premodern sources, it actually gets complicated. It is, for example, not easy to distinguish a member of a company who rendered account to his partners from an independent merchant who was not part of a company, but nevertheless cooperated with partners, for example by selling their goods on commission. Both, the company merchant and the independent merchant, rendered account to their partners, both did not always lay it open to their business partners that they were acting on behalf of someone else, and both tended to do business on the side on their own account as well. Recent research on one of the most famous large companies with a system of accounting between the outposts and the headquarters, the so-called Great Ravensburg trading company (*Grosse Ravensburger Handelsgesellschaft*), has come to the conclusion that it was not so much one large, hierarchical company, but quite a typical family business (Denzel 2009) which contemporaries never called "great" or "Ravensburg" (Meyer 2001). Furthermore, for a long time it has been doubted how effectively servants could have been surveyed, given the speed of premodern communication. A letter sent from Cologne, for example, needed about a week to travel to Bruges in the first half of the fifteenth century.

Furthermore, in recent decades it has become clear that these large companies were in no regard typical examples of business organisation in the sixteenth century, a time that is often called early capitalism. We know a lot about the Fugger and a few other exceptional companies since they left a well-stocked family archive besides documentation in the urban archives of Augsburg and other towns. But even in Augsburg, often regarded as the capital city of early capitalism, the average company consisted of very few partners only and traded to a small selection of other towns. The centre of attention has thus shifted to these smaller and more typical businesses (e.g., Steinbrink 2007).

Traditional research assumed that trading houses were founded in Southern Germany mostly, whereas Northern German (mostly Hanse) merchants cooperated in small-scale partnerships. For the last 40 years, a debate has raged about which form of organisation was more efficient for trade. In the 1970s, von Stromer claimed that the Hanse's organisational structure could only be assessed as retrogressive in comparison with Southern German trading houses (von Stromer 1976). Researchers on Hanse history answered with studies that aimed to show that the Hanse and the Hanse merchants' network provided all the services that a Southern German trading house could offer a merchant (Sprandel 1984; Selzer and Ewert 2001). For example, it was argued that while Southern German merchants organised the flow of information inside a trading house and exchanged information between branches and the headquarters of a trading house, Northern German merchants relied on the organisational structures of the Hanse, that is, the diets and *kontors* in Novgorod, Bergen in Norway, Bruges and London, for that kind of service (Jenks 2013), and exchanged information via the established network of their relations with family members, citizens of their home towns and other partners. However, neither the hierarchical structure of a Southern German trading house nor the workings of the trust-based network of Hanse merchants can easily be found in the sources (Ewert and Selzer 2016). Thus, the whole story of an antagonism between networks in Northern and trading houses in Southern Germany has recently been challenged (Kypta 2017).

In current research, the focus is shifting away from the fight between the defendants of large-scale trading companies and small-scale merchants' networks. Instead, social history and the study of kinship relations have prompted researchers to analyse social and kinship ties between the members of a trading company. The quest for finding the first instances of modern forms of business organisation has been replaced by the acknowledgment of the diversity of premodern trading organisations. Small-scale partnerships and informal cooperations have been studied for selected merchants. Even though the findings have not yet been combined into a systematic approach, it has become clear that disclosed companies were not the typical, but probably the most exceptional player on the premodern market. Small-scale, undisclosed partnerships always remained an important form of business organisation alongside disclosed companies. Merchants could even be part of a company as well as be engaged in either formal or informal partnerships at the same time (see Steinbrink 2007 for the merchant Ulrich Meltinger from Basel and Hammel-Kiesow 2011 for Hildebrand Veckinchusen from Lübeck).

Another hotly debated organisation whose rules and norms shaped markets is the merchant guild. The debate is concerned with the question whether merchant guilds fostered or hindered economic growth. Greif, Milgrom and Weingast follow a long-standing tradition in economic history when they argue that merchant guilds promoted growth, since they employed political pressure to ensure that urban or princely governments protected their property rights and granted trading privileges to them (Greif et al. 1994). Ogilvie has challenged this assumption (Ogilvie 2011). She points out that only merchants who were part of a guild could profit from such securities and privileges. They had no interest in overall economic growth, but just wanted to secure that their own share in existing activities was large enough. Economic growth only kicked in when guilds were abandoned, and open-access institutions procured all merchants with a reliable framework for their business.

Monasteries are a player specific to the premodern market. In contrast to the often-evoked image of secluded places for divine devotion, monasteries and their inhabitants must be numbered among the market professionals. They acted as sellers of agricultural and manual products and as buyers of all the goods they were not producing themselves. Because monasteries were often situated in the countryside but sold and bought their goods on an urban market, they acted as important intermediaries between town and countryside. Since they combined an ascetic way of living with a systematic approach to organising production and the aim of a growth in output, they served Weber as an example for a proto-capitalistic organisation (see section “The Emergence of Capitalism” in Chap. 2). The Cistercian order in particular has received much attention as an important player on the high and late medieval market. The order sprung from an attempt to reform Benedictine monasteries. One important aim was to come back to compliance with the rule of Benedict and practice manual labour. In contrast to the Benedictine monasteries, which often owned vast manors and exacted seigneurial dues, Cistercian monasteries were supposed to earn their living via agriculture, viticulture and manufacturing. They thus produced surpluses of grain, vine, cattle, and manufactured products that they sold on the market in nearby towns. As the expansion of the Cistercian order during the twelfth and thirteenth centuries ran parallel to the process of urbanisation, both processes are considered as interconnected: Urban markets gave Cistercians the opportunity to buy and sell products, and in turn the towns benefited from Cistercian supply and demand. Many Cistercian monasteries established outposts in nearby towns to facilitate their business on the urban market (Rösener 2007).

Princely courts should also not be forgotten as actors on the market. Some of the goods produced on the princely domain (see Chap. 3) were sold at the market. More crucially, princely courts fundamentally increased the demand for consumer products: A court consisted of a large number of people who had to be fed and clothed. Furthermore, if a prince wanted to be regarded as a proper prince, he had to show that he did not care too much about money, but could splash out on exotic food, exquisite clothes and so on. Courts can thus be regarded as one of the inventors of conspicuous consumption. In German research, courts as market actors already play an important role (Fouquet et al. 2008; Rothmann 1998, 500), but the interesting results of these studies still have to be connected to the ongoing debates about the increase in market exchange and the commercialisation of premodern Europe.

Recently, actors on the margin of subsistence have attracted the attention of researchers. Fontaine is one of the most famous figures in this field (Fontaine 2014). Her work is a good example of how a thorough analysis of the sources can lead to results that spark interest even among today's politicians: She argues that not only the wealthy and powerful but also and especially the poor people can profit from the integration into a market economy. "Don't throw away the market!" is her statement that has stimulated discussions and controversies in France. She argues that participating in the market could be part of a survival strategy of poor people during the Middle Ages, whereas in the course up to modern times the market was more and more regulated, which excluded poor people and thus robbed them of an opportunity to care for themselves. This interest in market actors on the margin of subsistence led to a number of studies on women as actors on the market, since, as Fontaine claims, as in any patriarchal society there were more poor women than poor men, so if one wants to find poor people, it is more promising to study women than men (Fontaine 2011). Whereas Fontaine analyses pawnbroking, which can be regarded as a typical female activity in premodern France, van den Heuvel focuses on Dutch female merchants (van den Heuvel 2007). Peddlers have also recently received some interest as market actors who had to struggle even to gain access to the market (Fontaine 1993; van den Heuvel 2015). These marginal figures drew attention to the second-hand market that provided an important arena for their activities (Fontaine 2011). However, most of these studies deal with seventeenth- and eighteenth-century sources, mostly from France and the Netherlands, since it is difficult to find source material for the time frame that is covered in this handbook. One exception is Park (2005), who analyses hucksters and peddlers in Luneburg, Goslar and Hildesheim in Lower Saxony. These studies remind us that these dimensions of the premodern market, even though they are difficult to study for late medieval times, should not be forgotten.

See reviewed sample studies 22, 25, 26, 29, 30, 31, 42, 43.

Rules and Norms of the Market

A market economy can only be understood if we take into account that markets are embedded in society. This notion can already be found in Adam Smith's works (van Bavel 2016, 21f.). After the mathematical revolution in economics beginning in the late nineteenth century, however, timeless models of market exchange gained prominence. During the 1970s, North began to raise doubts whether these models help to understand how exactly economies are working (see section "Transaction Costs and Institutions" in Chap. 2). He claims that economic performance depends on the institutions governing economic activities (North 1974; for a summary of his ideas, see North 1990). Due to the pivotal role of institutions as "humanly devised constraints that shape human interaction" (North 1990, 3), this new strand of research was called New Institutional Economics. The notion that institutions underlie economic performance pertains to market exchange as well (if not particularly): The way market exchange works is determined by formal institutions such as urban regulations or princely privileges, as well as by informal institutions such as the norms and beliefs of market actors. Economic sociology (Granovetter 1985) strengthened the position that markets have to be studied as part of a broader society, whose social role models and belief system shape the economic sector as well.

The difference between studies in the tradition of neo-institutional economics and studies in the tradition of economic sociology lies in the emphasis they put on growth: Researchers in the neo-institutional tradition want to find out which institutions promoted economic growth. North (re)launched this strand of research when he suggested that economic exchange was hindered by uncertainties that caused high transactions costs. Efficient institutions reduce transaction costs and hence foster economic growth. According to North, the modern state in the sense of a centralised monarchy created efficient public institutions and laid the ground for the take-off of the European economy in the Late Middle Ages and the early modern period (North 1985). Since transaction costs are difficult to assess, the efficiency of markets cannot be measured exactly, of course. It is thus hard to prove that a certain kind of institution promoted growth. Researchers most often resort to simply taking for granted that there must have been a causal relationship between efficient institutions and growth. For their subject of study, they choose regions for which high growth rates are observed, and then study the institutions that can be found in these regions. Since significant long-term economic growth can first be measured in quantitative terms for the Netherlands and England (see section "Great and Little Divergence" in Chap. 2), most studies in this strand of research deal with specific institutions in those countries. Dijkman, for example, points out how the institutions in fifteenth-century Holland turned out to be favourable, fostering efficient commodity markets and thereby growth (Dijkman 2011).

Before the modern state came into being, urban governments were central in providing formal regulations for the market. In successful market towns, they established common rules of exchange (such as certified weights and measures), monitored places for exchange (like the public scale and warehouses) and supervised brokers and money changers. They granted rights and privileges to certain groups, thereby enabling merchant guilds to function. Princes and landlords also provided part of the institutional framework of markets, most importantly by granting the right of safe conduct to merchants through their territory, which guaranteed that the merchants and their goods would be safe on the journey to and from the market. Protection and security reduced transaction costs (Epstein 2009, 71, 79, 143). But urban regulations were not only installed to guarantee a smooth functioning of the market. They also aimed at ensuring that the urban population was provided with commodities, and especially with foodstuff (Fouquet 2004; Dirlmeier 1978). In times of hunger crises, the urban government often extended the regulations for the food market (Jörg 2008).

A different strand of research emphasises the important role of private institutions in reducing transaction costs. In Greif's view, who is a leading figure of this camp, the self-governing institutions of merchants, such as networks, companies and guilds, accounted for the largest reduction in transaction costs in the European economy (Greif 2006). In contrast, Ogilvie claims that especially merchant guilds were not promoting growth for all but were just augmenting the gains of the ruling class of merchants (Ogilvie 2011). In his studies on the so-called fundamental problem of exchange, however, Greif combines the analysis of private and public institutions (Greif 2000): According to Greif, every individual who wants to participate in market exchange is confronted with the fundamental problem of exchange: She has to recognise mutually beneficial exchange relations as such, and both parties of a potential exchange have to commit to fulfil the obligations which will arise in the wake of the exchange process. Institutions serve as enforcement for these obligations. They can be public as well as private, but Greif stresses the point that institutions are more than legal rules: "Economic institutions are defined here as a system of social factors – such as rules, beliefs, norms, and organisations – that guide, enable, and constrain the actions of individuals, thereby generating regularities of behaviour" (Greif 2000, 257). Greif sees institutions as self-enforcing regulations that create and sustain economic efficiency.

Urban regulations and merchants' customs of course influenced each other in shaping market institutions (De Ruysscher 2009). The towns in the Low Countries such as Bruges, Antwerp and Amsterdam are said to have flourished partly because they accommodated the customs and usances even of foreign merchants into urban law (Gelderblom 2013). Since the institutional set-up differed from place to place, every market varies in some degree from other markets.

Researchers in the sociological and cultural tradition are not so much concerned with growth as with the interactions between economic, social and cultural practices and belief systems. For example, Fontaine understands the market as a form of interaction, as exchange between equals, as fixing a price after discussion. She is especially interested in the role the market played for people struggling to survive, for example, hawkers, pawnbroking women or other people at the margin of survival (Fontaine 2014). Howell claims that social relations in the Low Countries underwent a significant transformation when immovable goods became movable during the Late Middle Ages. This process of commercialisation cannot be regarded as a triumph of market exchange. Rather, market transactions had to be framed in a new market culture to make them morally acceptable, and other forms like gift exchange remained important as well (Howell 2010). The eighteenth-century concept of a moral economy has also regained prominence in current studies since E.P. Thompson introduced the subject into historical research in the 1970s with his studies of the English eighteenth-century working class. Davis applies the idea of a moral economy to the marketplaces of medieval England. He carves out the role which morality, law and practices played in shaping medieval markets (Davis 2012).

Practices and informal institutions are thus a favourite topic for researchers in the sociological tradition of studying markets. Informal markets in particular have gained some prominence in recent studies. It is, however, quite difficult to distinguish formal from informal markets in premodern times (Heebøll-Holm et al. 2019). The distinction derives from modern economics: A formal market is one that is taxed and regulated by some kind of government. Today's informal markets are often connected with illegal transactions, since from a legal point of view every transaction on a market has to be taxed. Hence, every un-taxed action on an informal market is by definition illegal. The standard case in modern economics is transactions on the formal market, whereas informal market transactions are considered as exceptional. This is not the case with premodern exchange. Not every transaction had to be taxed and regulated by a government, and formal markets were thus not the standard case.

In some instances, though, markets were highly regulated. This is especially true for urban markets in important market towns. The staple right was a very prominent case of market regulation (Gönnenwein 1939; Dijkman 2011, 159–200): If a town (in most cases a port city) had obtained the staple right, it could force merchants to unload their goods and present them for sale for a certain period of time before they were allowed to transport the goods to the next destination. Enforcing the staple right was attractive for a town's inhabitants, since it made sure that goods would be in supply at the urban market. This regulation of course increased the merchants' transaction costs, since they had to stop their trading voyage and offer their goods at that place (see section "Transaction Costs and Institutions" in Chap. 2). On the other hand, it could also reduce transaction costs, because merchants could be comparatively sure that in a town with staple rights some purchaseable goods would be found. In some cases, staple rights could be quite extensive, requiring merchants who passed the city in question with a distance of up to about 100 km to offer or even sell their goods on the urban market. The distinction between the formal, regulated, often urban marketplace and the informal market was thus often a geographical distinction.

See reviewed sample studies 24, 30, 31, 33, 34, 35, 44.

Conclusion

The study of markets in sum deals with a variety of issues, from the emergence of a market economy and its connection to modern growth to the question of how people organised exchange in circumstances very different from our own. The reviewed sample studies in Chap. 7 show how these different issues can be tackled on the basis of a wide range of sources and with different methodological approaches. These reviewed sample studies focus on the history of markets in the Holy Roman Empire. Most of them address questions which were outlined in the second part of this introduction: They study markets as places and events, analyse actors and rules of the market. The emergence of a market economy is mostly discussed for the Netherlands, which formally belonged to the Holy Roman Empire until 1648. The question to what extent or since when other parts or the whole of the economy of the Holy Roman Empire can be regarded as a commercialised or even as market economy has not been widely discussed (with the exception of Ogilvie 2010), but the many divers reviewed sample studies which analyse different elements of the market are already laying an excellent ground for such a discussion. Although, of course, not all existing research on the Holy Roman Empire can be reviewed here, our selection shows how the discussions on the market in the Holy Roman Empire can enrich the study of markets in premodern Europe.

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5

Introduction into the Study of Money and Credit

Stephan Köhler, Christian Scholl, Tanja Skambraks, and Sebastian Steinbach

The three introductory chapters on how to study production, market and money and credit provide frames for the reviewed sample studies in Chaps. 6, 7 and 8. They offer some guidance to find your bearings in the jungle of concepts and debates which makes premodern economic history such an interesting, but challenging subject to study. Each chapter structures important and current debates in the field and explains the basic concepts used in these discussions. Most debates concern the pre-

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modern European economy in general. Whenever possible, we refer to corresponding studies for the Holy Roman Empire. We point to classic works as well as to newer studies but offer no exhaustive compilation of all the research done in the area.

We recommend reading one of the handbooks, such as Epstein (2009), Malanima (2009) or, for the Holy Roman Empire, Scott (2002), alongside this book to get a deeper understanding of the processes and phenomena that shaped premodern production, market, money and credit.

What Is Money? (Sebastian Steinbach)

Introduction

Money and currency are important reference points for the level and development of a premodern economy—or as Pounds puts it, 'The currency is an index of the economy. It is not only the medium by which trade is conducted, but is also, in its volume and quantity, an indicator of the amount and extent of this trade' (Pounds 1994, 75). Although money and credit have been known since ancient times, they began to play a determining role in society and economy (monetisation) during the High Middle Ages (twelfth and thirteenth centuries).

Research on Money History and Coinage

The research on money, currency and coinage within the borders of the Holy Roman Empire (as well as for Europe) from the fourteenth to the early seventeenth centuries is traditionally divided into the three disciplines economic history (which focuses on the history of money and currency), numismatics (which deals with the coins as material objects and the circumstances of coinage) and archaeology (which examines hoards and single finds, which are the main sources for questions of circulation and the volume of money). The development of money, currency and coinage within the specified period of this book ranges from the introduction of multiple-metallic nominal systems in the Late Middle Ages from 1250 onwards to the crisis of currencies in advance and in the first years of the Thirty Years' War 1618–1648 (Kipper- und Wipperzeit) including the massive inflow of precious metal (mainly silver) from the New World and its influences on the European gold-silver ratio (price revolution)—this because the purchasing power of premodern coins usually depended on their precious metal content with partly dramatic consequences in economic history. Considering this, research on money from about 1250 to 1650 is also divided within the great epoch-disciplines of medieval and early modern history with only a few epoch-spanning studies from a numismatic point of view. Keeping in mind that already the 'Older Historical School of Economics' (*Ältere Historische Schule der Nationalökonomie*) in the nineteenth century and their famous theorists wrote extensively about the history of money (i.e. Hildebrand 1864; Knies 1873/1876; Knapp 1905), what is today a subdiscipline of economic history is much older than the scientific discipline of history itself. Within the focus of most of these older studies there lay the development of money from a natural economy to a money economy and finally a credit economy, something which, from a modern perspective, seems to be erroneous (Kindleberger 1984), because recent studies show that these three apparently antithetical dimensions of money most of the time existed side by side just with different emphases.

One central problem lies within the definition of money itself. Whereas from the perspective of a modern economist money is defined by its three primary economical functions—medium of exchange, store of value and computing unit—for longer periods in history money had also been used as a medium of representation, long-term investment or mass medium. Considering this, the definition of money has to be adjusted to the historical background in which it is used. From this more historical than economic view, its primary function is to change (natural or craft) goods into a widely accepted object of exchange, which can be retransferred into goods, to bridge spatial and temporal distances of payment. This implies that money seems to be more a social agreement than a state regulation. Although there is a long debate on which grounds the social agreement or convention of money bases (Knapp 1905; Menger 1909;

Kindleberger 1984; Richter 1987; Schremmer 1993; Tilly 2003), the main arguments always oscillate between the poles of regulated national and spontaneous market power.

Whereas in the last 25 years much has been written about the coinage and currency of around the time of the so-called price revolution (*Preisrevolution*) at the beginning of the sixteenth century and its impacts on farming, craftsmanship and cities from a regional (i.e. North 1989 or Metz 1990), nationwide (i.e. Gerhard 1993) or European perspective (i.e. Pieper 1985 or Rössner 2012), there are fewer studies on money in the fourteenth and fifteenth centuries. This fact is caused mainly by the greater interest in the quantity theory of money, which assumes a connection between the amount of money and the price level (Hamilton 1934; Braudel and Spooner 1967). Before the nineteenth century, the main form of money had been coins made of precious metal (gold and silver), so the amount of money in circulation had been equated to the amount of metal available. Any change in the availability of precious metal necessarily changed the amount of money and influenced price stability. With the development of credit money, these theories focusing on the amount of money had to be changed.

Research on the history of money increased again in the 1970s, when historians began to investigate topics such as currency, money policy and money circulation instead of simply the history of coins—as the main form of money in premodern times—which then became mainly the field of numismatists, who were often also the trustees of the great European Coin Cabinets. For that reason the research questions which were being dealt with often depended on the content of the single collection of one cabinet and its keeper. The most common German overviews of the history of money (coins) within the Holy Roman Empire from the Middle Ages to modern times, and those used in academic teaching, are Suhle 1974, which is more a history of coins than a history of money and concentrates on species presented in the Berlin Coin Cabinet, as Suhle had been director of this institution; the extensive study by Rittmann (1975), which starts in the late fifteenth century; and the more summarising book by Sprenger (2002), which gives an overview about the most important developments.

The small paperback by Trapp and Fried gives a brief abstract about money within the boundaries of modern Germany (Trapp and Fried 2006), but touches themes such as price development, the technique of coinage or the definition of numismatic terms. From a wider European perspective the only handbook for the history of money in the Middle Ages is still Spufford (1988) with plenty of information, although sometimes now on a somewhat outdated level. A comparable study on money and its use in early modern times still is lacking. Helpful for a first and general overview of the history of money from medieval to modern times Kuchenbuch (2016) and North (2009). Useful dictionaries for terms of numismatics and money history are Schrötter (1970), Fengler et al. (1976), Kahnt (2005), Kroha (1997) and North (1995).

Early studies on the monetary history in premodern Europe from the 1970s to 1980s and their predecessors were highly influenced by the Annales School and focused on the regions of the Netherlands (Munro 1973, 1983; Spufford 1970, 1986), Italy (Cipolla 1958), Spain (Hamilton 1934) and France (Spooner 1972), where a large quantity of written sources and a much more centralised system of money allowed detailed statistical (quantitative) analysis of coinage and currency (circulation, exchange rates and volume) over long periods from late medieval to early modern times. This meant a departure from the previously more descriptive methods and theories of numismatics, concentrating more on the objects, to the so-called quantity theory of money, which states that the price level of goods is directly proportional to the amount of money in circulation. Hamilton first related this theory to the price revolution of the sixteenth century by pointing out that the silver from the New World increased the precious metal stock of Europe and therefore the price level rose, too (Hamilton 1934, 1936). According to him, this led to an enormous inflation and the development of capitalism in the early modern time. Other authors commented that there had been no direct correlation between money supply and price development, rather, the price increase of the sixteenth century had been the result of the demographic trend, which seems to be an argument focused on the perspective of the Malthusian catastrophe, which in its first version outlined that population growth would always outpace agricultural production if not restricted by natural resources and biological effects (Malthus 1798, see section "Population, Demography and Economic Growth" in Chap. 2). The food supply could not keep pace with the food demand (Abel 1978; Henning 1991, 546–552; Postan 1950), and the increase of money circulation had been one reason for the inflation, but not the most important.

Since the 1980s, paper money and book money have also been investigated as accompanying sources for the history of money; and coin hoards as well as written sources have since the 1970s been examined to consider questions of money circulation and volume, thus creating a more holistic history of money. Good examples for this new development are the case studies by Eichhorn about the coin circulation of the Franconian region from the fifteenth to the early seventeenth centuries (Eichhorn 1973) and by Ilisch about the coin circulation in Westphalia from the ninth to the nineteenth centuries as it can be seen from the hoards (Ilisch 1974, 1992)—and those that for the first time analysed the coin circulation with electronic data processing, in Austria (Cerwenka and Roth 1972) and Southern Germany (Schüttenhelm 1987). But taking into account the wide range of studies the main division still lies between the history of coins or coinage (numismatics) and the history of money (economic history). The fact that the number of chairs for numismatic science as part of the so-called Historische Hilfs- or Grundwissenschaften (auxiliary sciences) at German universities has been reduced to almost zero has led to the lamentable circumstance that numismatic knowledge is no longer part of the education of young academic scholars.

Within the last 15 years there has also been a new development to analyse the history of economy and money more from a perspective of cultural and social history (Hörisch 2004; Bastian 2009; Schnaas 2012; Braun 2012; Paul 2017). Within these studies money and coinage are embedded in the development of society, culture and religion instead of only in economic links, and the enormous flexibility of money in different social contexts in premodern times was now analysed. In particular, the development from an acceptance of money based on its material (metal) to one based on belief (trust) had been extensively analysed as well as the connection between religion and (money) economy, between gift and sacrifice—a theme related to the history of economic thought as described by Weber (1922, 1934), Simmel (1900) or Luhmann (1988). Much remains to be studied and there are still a lot of (written) sources such as counting books, toll rolls and contracts with the operating mint-masters waiting to be edited, in order for historians to be able to extract detailed information on the exchange rates of currencies and their metal value as well as on the organisation of coining itself within this period. Also, the relationship between money and society (cf. Le Goff 2008, 2011), as well as the knowledge of individuals about theories of money during the premodern era, needs to be studied from a more cultural and social perspective, including paintings or pamphlets.

Currency and Policy

The landscape of coinage and currency in central Europe from the fourteenth to the sixteenth centuries is a mosaic of small (both ecclesiastic and secular) territories, each with its own currency or even currencies, if the single territory had been a mixture of widespread regions with no coherent area, such as Prussia was from the seventeenth century onwards. For this reason, the single studies on regional currency and money policy of single territories and even rulers are also widespread and hard to overview for a researcher not used to it. Preliminary information about a certain theme can be found in the most common bibliographies (Clain-Stefanelli 1985; Grierson 1979) or the *Survey of Numismatic Research*, which is published in the files of the *International Numismatic Congress* (1967 to 2015). To receive information about the coinage of one territory, ruler or time period you should consult a catalogue. Easier to study are countries such as England or France with their centralised money policy, fixed denominations and (more or less) stable currency systems.

Apart from the fragmented internal currency system, foreign currencies also circulated within the territory of the German Empire from the thirteenth to the sixteenth centuries, making it quite confusing for the modern researcher to analyse the money circulation in general. While the ruling dynasty of the Staufer (1138–1250) during the High Middle Ages at first tried to centralise the coinage within their territories, by 1220 (*Confoederatio cum principibus ecclesiasticis*) and 1232 (*Statutum in favorem principum*) Friedrich II (1212–1250) had ceded important rights of coinage to the clerical and secular rulers (Kamp 2006). This marked the beginning of a new development of currency and money within the Holy Roman Empire from 1250 onwards. Not until after 1871 did the shattered currency system in Germany make place for the centralised *Reichswährung* of the German Empire (1871–1918).

Without a centralised monetary policy set in place by the Emperor himself, the single owners of the right of minting (i.e. dukes, bishops or cities) tried to organise the coining and circulation of currency within greater geographical areas by contracts (*Münzverträge*)—that is, the *Wendische Münzverein* (Jesse 1967) or the *Rheinische Münzverein* (Hess 1971; Mäkeler 2010, 246–258; Weisenstein 1995)—and the imitation of foreign coins (Kellenbenz 1986, 883), as, for example, the English Sterling in the thirteenth and fourteenth centuries (Berghaus 1947; Steinbach 2013). The powerful cities of late medieval Germany also tried to regulate the inflow of foreign (especially high valuable) coins by countermarking them (Krusy 1974). What was lacking was an 'Imperial Coin' (*Reichsmünze*) with overall acceptance. To simplify the money transport, merchants calculated with trade coins (*Rechenmünzen*) rather than with the circulating 'real coins' and their individual changing exchange rates. Such trade coins were, for example, the mark of Cologne or Lübeck. Of course, this makes it hard to say which really existing coins might have been used to pay the agreed sums of the written sources. And therefore metrology is such an important auxiliary science for the historians of money to calculate the precious metal content of the coins used (Treuber 1877; Verdenhalven 1968).

The treaties of the thirteenth to the sixteenth centuries could not surmount the fragmentation of currencies, because the territories which were bound by them had been too small to cover greater parts of the Empire. The *Reichsmünzordnungen* (imperial coin treaties) of the sixteenth century and the consultations of the *Reichstage* (imperial diets)—Worms 1521, Esslingen 1524 and Augsburg 1521/1559—attempted to standardise the coinage without abandoning the territoriality of currency (Kellenbenz 1986, 884). This attempt failed in confrontation with the interests of the landlords and without a powerful central government with the power to enforce the decisions.

As long as the value of the coin was based on its precious metal content, the striking of small coins could not be profitable without reducing the quantity of silver. A reference unit had been the mark of Cologne (*Kölner Mark*) as a counting unit with its weight of about 234 grams (specified with 233,856 grams in 1837 by the *Münchner Münzvertrag*) of silver. In 1524 the *Reichsmünzordnung* of Esslingen had first declared the mark of Cologne as the standard of coin weight within the Empire.

The division between the coinage of the Empire and the coinage of the single rulers makes it necessary to distinguish between the imperial finances, the finances of single territories and the finances of the cities (Kellenbenz 1986, 884–890). Therefore, there are plenty of case studies focusing on different regions (i.e. Kühn 2015; Schilp 1991) as well as general summaries of the development of the state finances (i.e. Klein 1974). Most of the finances seem to have been based on credit more than cash and one has to differentiate between the counting money mentioned in the written sources and the coins used in daily payments as well as between merchant transactions of higher volume and small change used by the common people. Still lacking is a general overview of exchange rates within the Holy Roman Empire—a Sisyphean task if you think of the multitude of territories and written sources.

Circulation, Volume and Prices

Money (coins and ingots) in premodern times was mainly based on precious metal (gold and silver), which even formed the basis of cashless forms of payment such as bills of exchange. Thus, the development of money supply depended on the availability of precious metal—both in production (mining) and circulation (melt down) (Sprenger 2002, 87). The money supply of Europe in 1470 has been estimated to have been 5000 tons of silver—with 1000 tons only for Germany—which raised to 20–25,000 tons in 1620 by the inflow of silver from the New World (Henning 1991, 547; 1976, 182; 1981, 54; Trapp and Fried 2006, 214). Around 1500, 3500 tons of gold and 37,500 tons of silver are estimated to have formed the precious metal supply of Europe available for minting (Braudel and Spooner 1967, 445). Silver had been available, for example in Tirol and Saxony, gold in Hungary and copper in Sweden, which meant that none of the coin-producing authorities had direct access to it, but had to either buy it from a market or acquire it by exchanging foreign currency or melting down old coins. Hence, the inflow of precious metal from Africa (Portugal) or America (Spain) changed the quantity of precious metal available in Europe substantially and in this context the money supply as well as the exchange rates between gold and silver (cf. Rosen 1981). Between 1500 and 1650 about 181 tons of gold and 16,886 tons of silver reached Spain from the New World.

But the development of the economy in the fifteenth and sixteenth centuries led to a paradoxical situation: Although (or because) the population rose and the economy prospered and more people used money for their daily payments, cash money became more and more scarce. Depending on the supply of raw material (gold, silver and copper), the supply of money could not be increased without limit. While merchants and bankers could carry out their transactions in forms of cashless payments, cash money (coins) needed to be struck for daily payments such as buying food or clothes or to pay taxes and pensions. Thus, the premodern era was also a time of shortage of (cash) money (Cipolla and Borchardt 1983, 335). Also, Western Europe had a negative trade balance with East India and the Levant: Huge quantities of silver imported from the west flowed away to the east (cf. Attman 1981).

Based on Fisher's quantity theory of money, Sprenger used the 'equation of exchange' for the time of the price revolution in the sixteenth century (Sprenger 1984; Henning 1991, 549):

The equation states

$$M \times V = P \times Q$$

where M is the total nominal amount of money supply in circulation; V the velocity of money; P the price level; and Q the index of real output.

Sprenger calculated with 4 $M \times 1.5$ to 2.5 $V = 3$ $P \times 2$ to 3 Q. This would mean that the quadrupling of money supply multiplied with an increase of the velocity of money by 50–150% is equal to a double or triple raise of the index of real expenditures multiplied with the triple of the price level (6 = 6 to 10 = 9). In other words: The quadrupling of the money supply (5000 to 20,000 tons of silver) leads to a tripling of the price level as we can see it, that is, in the raise of the price of rye in Brunswick between 1461/1470 (12.4 grams of silver) and 1611/1620 (35.1 grams of silver) by 2.83 or in the price of an ox on the market of Hamburg from 1471/1480 (236 grams of silver) to 1611/1620 (902 grams of silver) by 3.82. Also on the markets of Southern Germany the average price of an ox rose from 1500 to 1600 by 300% (Henning 1991, 540–541).

Talking about the price development, there are mainly three different methods with which to express the development of prices, two of them being influenced by the history of money and the question of the value of a coin or currency (Henning 1991, 538–539; Trapp and Fried 2006, 184–186):

1. One could express the prices in units of money used (really existing currencies). This would correspond to the impression of the people from the analysed time, but would be hardly comparable with other regions due to the multitude of exchange rates between the different currencies existing in Germany. Also, there is a great uncertainty whether prices fixed in specified coin types within the contracts were also paid in the agreed currency and one has to think about the differences of counting money (*Rechnungsgeld*) and real money (*Bargeld*). There are only few sources mentioning daily payments such as done on daily or weekly markets.
2. To keep the prices within different regions of the German Empire comparable and to avoid the difficulties of complicated (and sometimes unknown) exchange rates of currencies, a popular method is the expression of prices in units of precious metal (silver or gold), which makes sense considering the fact that the value of the coins was based on their precious metal content. The problem in this case is that silver

was a commercial good, whose price could also change on the market and therefore had an influence on the gold-silver ratio as well as on the exchange rates. On the other hand, it is not always certain whether the determined precious metal content of one currency as it is expressed in charters fits the real content, which often had been manipulated by the minting authorities. Nevertheless, one could say that highly valuable coins such as *Taler* or *Gulden* had a higher stability than small change.

3. Economic historians prefer a third way, namely, the assessment of prices of a fictitious basket of goods, which is also difficult to combine for the fifteenth/sixteenth century as we don't know prices from all regions at all times (see 'Basket of Goods' in Chap. 9). Nevertheless, the knowledge of the development of prices seems to be useless without an impression of the money people had available (earned or conserved).

Manipulation and Crisis

As we have seen, a major problem for the minting authorities in the premodern era had been on one hand the precious metal supply and on the other hand the fact that producing money, the value of which is based on the precious metal content, at first instance costs money, for one needs to pay the workers of the mint to buy the metal, the wood to keep the furnaces running, the iron tools, and so on. Hence, producing more valuable coins was cheaper, considering the fixed costs of the minting process, than producing small change. It has been estimated that in the fourteenth century the production of a gold coin (*Rheinischer Gulden*) costed about 2% of its value, while a silver coin (Groschen to Pfennig) costed 5–15% (Kruse 1888, 105–106). To keep the producing process of money lucrative, manipulation of the precious metal content had been a popular method. Especially the metal content of the small change had to be reduced to finance the minting of the *Taler* with the result of permanently modifying (debasing) the exchange rates between both (Spufford 1989).

Following a crisis there was often a lack and debasement of small change as expressed in the *Schinderlingskrise* (1458–1460) or in the *Kipper- und*

Wipperzeit (1618–1623). The *Schinderlingskrise*—although limited to the Southern part of the Holy Roman Empire (Bavaria and Austria)—is the first great inflation in Germany (Gaettens 1955; Sprenger 2002, 92–95). To finance inheritance disputes, the emperor Friedrich III (1440–1493) struck *Pfennige* and *Kreuzer* of poor quality. Other secular and clerical authorities like the archbishop of Salzburg and the duke of Austria followed his example. Between 1436 and 1459 the exchange rate between the *Pfennig* of Vienna and the *Gulden* of Hungary rose from 205 *Pfennige* to 960 *Pfennige*. In 1459/1460 the rate of the *Gulden* of Hungary rose almost every day at about 20–30 *Pfennige*, which meant that the small coins consisted almost exclusively of copper by the end of the *Schinderlingskrise*. Most affected was the poor population who had to pay in small change, while wealthy merchants and craftsmen could handle their payments in higher values and more stable coins made of silver and gold (*Groschen* and *Gulden*). On the 28th of April 1460 Vienna returned to striking high-quality coins with a metal content like that used before the crisis and the exchange rate was set to 180 *Pfennige* for one *Gulden* from Hungary.

Even more dramatic was the *Kipper- und Wipperzeit* at the beginning of the Thirty Years' War, where the right of producing coin was used to finance the war costs by most of the minting authorities (Gaettens 1955; Ilisch 1998; Rittmann 1975, 223–256; Sprenger 2002, 105–110). Coins of poor quality such as *Dreibatzen* and *Zwölfkreuzer* were produced, their origin as well as their precious metal content veiled by backdated year specifications, non-existing coat of arms, epigrams instead of meaningful inscriptions and a silver plating of copper. As most of the population consisted of illiterate people, they orientated themselves by the symbols and not the inscriptions of the coins, and took them for good money. Almost every minting authority took part in the production of poor-quality money and employed merchants (often Jews) to buy good coins in order to melt them down in the (partly illegal) mints. On one hand the constantly rising money supply boosted the economy, but the prices rose as well and again ruined (just like during the *Schinderlingskrise*) those parts of the population which depended on small change or received fixed salaries.

Things changed when the authorities began to receive back the poor money as taxes from the people and mercenaries called to be paid for with better money. The inflation of the Thirty Years' War for the first time generated the production of a great quantity of pamphlets and polemics—a fact that is analysed in detail (Rousseaux 2001; Redlich 1972; Freytag 1898). A lot of regional studies also exist about the influence of the Kipper- und Wipperzeit within certain territories (cf. Altmann 1976; Schneider 1981; Roth 1993; Weisenstein 1991 or Klüßendorf 1989).

Finally, we have to keep in mind that money (coins) in premodern times could be manipulated by reducing the total weight (rough weight) and the precious metal weight (fine weight) and modifying the exchange rates between small change of foreign coins and higher value nominals.

Uses and Forms

An often-heard basic rule of numismatics is that coin is money, but money is not necessarily coin. For a long period in human history, in fact for the longest period at all, the main material form of money has been coin. Within the time period covered by this book, the appearance of money changed from only material forms (objects) such as coins, ingots or even promissory notes to an introduction of cashless payment, particularly for large sums for long-distance trade. But with regard to all the 'non-coin forms' of money, it is important to note that even they needed a material expression—at least paper—to be reminded and accepted. Also, the cashless payment transactions didn't mean an increase of money supply in the Late Middle Ages, because they were used for cash which had been deposited (even if only theoretically) somewhere. At least, even the book money had to be covered by material cash (precious metal) and not by credit (Sprenger 2002, 91–92).

From the thirteenth century on, the need for coins with greater nominal values led to the invention of great silver coins such as the *Groschen* (*grossus denarius* with a value of several, often 12, pennies) or gold coins such as the *Floren* (*Fiorino d'oro* with a value of 240 pennies) mainly in Italy (Kluge 2007, 64–68; North 2009, 15–28). In other words, the new coins were the material expressions of the former shilling (12 pennies) and pound (240 pennies) as counting money from Carolingian times (ninth century) onwards. From this perspective the later *Taler* was no more than a silver coin with the value of the golden *Goldgulden* or one pound (240 pennies). The great and often confusing varieties of European currencies (real or counting money) in premodern times still followed the early medieval model of money structure to a certain degree.

The new coins made of silver (*Groschen*) and gold (*Gulden*) were widely imitated not only within the boundaries of the Holy Roman Empire (Rittmann 1975, 48–80; Sprenger 1984, 73–86) and depended on the availability of precious metal: The output of silver from mines in Bohemia and Saxonia led to the striking of *Prager* and *Meißner Groschen* and the lack of gold by the end of the fifteenth century to the *Taler* as a silver equivalent to the former *Goldgulden* (Kellenbenz 1986, 309–310). Between 1300 and 1650 the availability of silver and with it the money supply of Europe grew because of mining improvements (1300–1500) and the inflow of precious metal from overseas (1500–1650).

When looking at the users of money in the Middle Ages and early modern times, one has to differentiate between two groups: on the one hand, a small group of specialists, who mainly used currencies of high value and were able to prove the precious metal content of a coin or had the required knowledge to do so (merchants, mintmasters, special craftsman etc.), and on the other hand, the great mass of users, who at first instance paid with small change and had no chance to receive information about the fineness of a currency (Volckart 2009; Chilosi and Volckart 2011). Consequently, a small group of specialists were able to earn money by using their knowledge about coin types, metal contents and exchange rates. A basic (and often underestimated) skill was the ability to read, for the coins presented plenty of epigraphic and iconographic information which had to be understood. Most of the people could only orientate themselves by the iconographic information the coins presented. On this theme research still has to be done by analysing coin hoards, the intentions of their concealment and the types contained more often than others.

See reviewed sample studies 52, 54, 59, 66.

What Is Credit? (Tanja Skambraks and Stephan Köhler)

Credit can be defined as an exchange of two services with a certain time delay (Braudel 1985). Credit thus existed on all levels of economic exchange and covers everything from the delayed paying of everyday consumption goods up to the financing of long-distance trade (Kuske 1927, 52). Pawnbrokers and small-scale credit existed nearly everywhere, but their methods and interest rates were not adjusted to the needs of trade (for small-scale loans see below). Credit gets more important for the higher economic spheres like trade, where it serves to cover a shortage of precious metals, to extend the velocity of circulation of money and to enlarge the mass of available money through credits. Thus, credit is all about activating or replacing the lumbering money that is lacking or bound in some other mercantile activity.

The ubiquity and importance of credit for medieval societies has long been known to historians (Kuske 1927; Postan 1973). The expansion of trade through credit operations during the medieval period (1050–1350) had a huge impact on the development of Europe.

The most important change in this regard was that in the Middle Ages a growing proportion of business dealings were carried out by credit operations, and these further multiplied the velocity of money circulation: 'Unstinting credit was the great lubricant for the Commercial Revolution' (Lopez 1976). The rise of commercial activity from the tenth century onwards was not fuelled by a massive input of cash, but provided by means of credit. It was thus the emergence of highly developed forms of credit from the tenth century onwards that was critical to new business action. The consequences of the access to trade credit and to new contract formulas in Northern Italy became clear by the twelfth century, when documentation allows us to follow the movement of capital (De Roover 1948; Braudel 1979, 1981; Van Houtte 1980; Epstein 2009, 84–88). Lopez regarded most other European regions as backwards with respect to the Commercial Revolution and trade credit (Lopez 1976). Similarly De Roover wrote, "there were no banking places in Germany, Scandinavia, Poland or Hungary" (De Roover 1968; quoted in Dirlmeier et al. 2009, 189). This opinion prevailed in the historical research about Germany and the Empire until the 1970s. Older research about the German Hanse attested to the organisation a certain animosity towards credit businesses (Dollinger 1989; Sprandel 1975). This view was the natural product of scholars whose main interest lay in normative sources, especially the acts of the Hanserezesse and charters of the Hanse towns. Other sources that depict the immediate economic and credit activities (account books, pawn books [Pfandbücher], municipal court records etc.) have been left out in past research. The so-called economic backwardness of the Hanse and Northwestern German regions compared with Italy—but also Southern Germany—has been modified by recent research (Jenks 1982; Stark 1993). The lack of credit instruments and corresponding institutions cannot be explained solely as state of underdevelopment but rather because of a different institutional structure of trade of these regions, which made these credit operations unnecessary (Gilomen 2010, 68). Based on different sources and methods recent studies have produced several microstudies about the widespread use of credit practices all over Northwestern Europe and Germany (an overview is given by Schlumbohm 2007 and Clemens 2008). As an example, the study of Rothmann on the Frankfurt fairs and his methodological approach is discussed in Chap. 8. It shows the importance of financial institutions at medieval fairs and proves that the financial aspect at the medieval Frankfurt fairs—and thus in Germany altogether—was far earlier than was previously thought.

In current research, credit is also explored as a fundamental socio-economic practice of late medieval and early modern societies. A starting point here is the assumption that social coherence is generated by market participation, among other things, which is essentially based on debt, outstanding debts and mutual obligations. It is important to note that a credit relation emerged as soon as somebody either willingly or unintentionally got into default of payment and thus needed credit.

Thus, credit in the Late Middle Ages means a variety of often informal and at the same time omnipresent loan practices on the basis of which social relations were formed, perpetuated and also put into conflict. These include monetary as well as non-monetary loans, which were granted and received by members of all social strata (Kuske 1927). Thus, credits were ubiquitous, be it as consumer credits, production credits, investment credits or labour credits. The practices of granting loans can be grasped almost exclusively at the local level, for example in the accounts of municipal institutions such as hospitals, guilds, brotherhoods or cooperatives, which document the institutionalised form of credit.

Based on trust as a fundamental prerequisite, premodern credit (lat. *creditum*, *credere* means to believe) is an expression of social relationships; this has also been emphasised in recent research (Ogilvie 2005; Muldrew 1998; Fontaine 2008). Credibility was important on both sides, the creditor's and the debtor's. The lack of trust in the debtor was often balanced by pawns compensating for any missing social or financial status. People of higher social status could prove their credibility through guarantors backing a loan with their own wealth. Here, the close relation between reputation and credibility/trustworthiness becomes obvious. The question of trust also had a decisive impact on the formation of techniques of written administration (Heers 1999, col. 1481), since not only new forms of bookkeeping were used, but new forms of voluntary jurisdiction in city and town courts were also emerging. Trust is described by economic historians as one of the cornerstones of a functioning financial system (Lorenzini et al. 2018). Modern markets can be viewed as the trust in government-regulated central and private banks, currencies, insurance companies and other financial investment companies—or as Muldrew put it, as an increasing trust in the efficacy of mathematical modelling—as opposed to premodern markets based on interpersonal obligations (Muldrew 1998, 9). Because of the non-existence of public banks and the scarcity of money in the medieval and early modern period, almost all market transactions in order to finance consumption and investments were done on credit, depending to a large scale on interpersonal trust. Lending money involved transaction costs such as costs for information, negotiation, monitoring and (contract-)enforcement, which could be lowered through formal and informal institutions like courts, kinship or intermediaries that reduce asymmetric information (North 1990, see section "Transaction Costs and Institutions" in Chap. 2). The level of trust in specific societies, and therefore the level of access to credit or the expectation of debt repayment is severely affected by the overall economic and political framework.

Formalised credit transactions are traceable in a variety of sources. While the most important instruments of credit like *mutuum*, *depositum* and *cambium* stemming from Roman law have certainly existed since the twelfth century in Italy and Southern France, Northern economic centres such as Bruges and Antwerp adopted these techniques in the course of the fourteenth century (North 1991, 2). Especially the new form of the transferable promissory note proved to be a successful innovation of the premodern period.

Credit links the spheres of production and market. Nearly everybody in premodern society—from the peasant who sold his grain still 'on the stalk', to cities selling rents and annuities to their inhabitants to finance wars or buildings—was involved in credit transactions. Thus, one must keep in mind that all economic sectors—agriculture, crafts, trade and households—were permeated by credit and that economic and social development was shaped by credit transactions (Kuske 1927; Heers 1999).

See reviewed sample studies 49, 51, 55, 60, 63.

New Fields of Interest: Small Credit

Credit among merchant bankers and kings and princes, the so-called high finance of the Middle Ages has been extensively studied. In contrast, small loans and informal credit have mostly been neglected by researchers of the last decades. Although the omnipresence of credit relationships in all societies and epochs of Western European history was not questioned by anyone in the following generations of researchers, the monetary needs of the small people were seldom studied (Signori 2015, 11, with note 11 to the exceptions). It was not until the 1990s that a trend reversal began to emerge. Microstudies on local markets were carried out, which focused on the social and cultural dimensions of microcredit practice in urban and rural societies in Italy, England and France, mainly in the early modern period (Briggs 2009; Shatzmiller 1990; Fontaine 1993; Berthe 1998; Schlumbohm and Fontaine 2000). This approach has been pursued further in recent years in informative microstudies (Fouquet et al. 2007), for example in studies on the credit and debt relationships of citizens in Basel and Zurich (Gilomen 2011; Signori 2014), on the putting-out system in the

Late Middle Ages (Holbach 2014), on Jewish small credit businesses in Frankfurt/Main (Schnur 2014), on usury and purity in Cologne (Arlinghaus 2014) and on rural credit (Gilomen 2016; Fouquet and Andermann 2016), all of which draw attention to the close interdependence of social communities as credit communities.

Furthermore, the aforementioned works pursue the intention of embedding debt management and credit; that is, they are not examined in isolation as economic activities, but "in their social and cultural dimensions and conditions" (Schlumbohm 2007, 8). Consequently, the reason for the spread of the credit system in premodern societies is no longer sought solely in the 'economy of scarce money' (Schuster 2008, 43). The social functions of the market as a place of exchange and credit as a commitment in social networks across social classes are increasingly coming into focus. From this perspective, Muldrew, Fontaine, Schlumbohm and others have discovered and developed the informal market events and the 'markets of the small people' as an important issue for understanding the premodern economy. In their central importance for the sheer survival of large sections of the population in the Middle Ages, informal institutions and small loans have only recently come into the focus of medieval studies (Fouquet and Andermann 2016).

See reviewed sample studies 53, 57, 63.

Securing Credit

There were many ways of securing credit in the Later Middle Ages. The most common forms were pawns, bailments and promissory notes. In Germany, in the course of the fourteenth and fifteenth centuries, people started fixing their debt relations by writing down their obligations in a legal court, producing a legal instrument in the form of an entry in a certain book. These books provide a very rich source for late Medieval credit, for both towns and villages alike (Fouquet 2016; Signori 2015). In case of default on repayment, possible sanctions ranged from a transformation of the sum into instalments to court cases, leading possibly to seizure of the debtor's belongings, to banishment from the town or jail sentences. Excommunication was another instrument—one used by the church.

See reviewed sample studies 56, 63.

Basic Lines of Research on Credit

Interest Rates and Usury (Tanja Skambraks)

The idea of a compensation for a certain financial service (i.e. a certain amount of money lent over time for consuming or investment) already existed in the Middle Ages. Although lending money at interest was very well known, it was also a highly debated practice in the Middle Ages. A strong ambivalence becomes visible: On the one hand, the church law before the fourteenth century clearly argued in favour of lending without any interest payment at all, and on the other hand, the everyday financial transactions that become visible in accounts, testaments and bills of exchange prove interest to be part of many if not most credit transactions. Although we know a lot about the perception of usury and interest, it seems much more difficult to shed light on the real practices and actual level of interest rates. Looking at the practices, it is hard to specify the exact rates of interest over this time span. Interest on credit could be calculated per annum or per month. The rates of private moneylenders lay very roughly between 4% (very low) and 70% per annum (cf. Gilomen 1998, 107). Some information stems from normative sources like statutes or city councils fixing the interest rate for small loans, pawnbroking or government debts as well as Jewish moneylending.

Besides, the Bible, church law and theological tracts formed the ethical background of medieval economics. Information about the practices of taking interest remains rare, since pragmatic sources very rarely state the actual interest rates paid. Consequently, researchers need to investigate this information in an indirect way, for instance by using data from commercial transfers, like bills of exchange or the correspondence of merchants containing other numerical information, like exchange rates that allow to effectively calculate the interest rates. New quantitative approaches using statistical and mathematical methods tackle this question and data material.

The *Decretum Gratiani* (a law codex compiling roman and church law, eleventh century) had a very strict definition of usury as everything but the exact sum of money that was originally lent (Luke 6:35). According to this view, any kind of surplus or *interesse* (interest) was forbidden.

In the thirteenth and fourteenth centuries exceptions were named for the legitimacy of interest as compensation by famous canonists like Hostiensis, Thomas Aquinas, Bernardino da Siena and others (Noonan 1957). Consequently, there were certain cases like delayed repayment (*damnum emergens*), the risk of a credit (*periculum sortis*) or a stipend for the labour (*stipendium laboris*) involved in financial transactions, that emerged as first steps towards legalisation of interest taking. Eventually, the fifth Lateran Council in 1515 stated, that Christian (!) credit institutions (i.e. the Monti di Pietà) were allowed to take an interest rate of 4–10% p.a. for the sake of their survival and payment of running costs since they were charitable institutions and substitutes for Jewish and Lombard 'usurious' credits.

In sum, the discourse on interest and usury became more and more flexible between the thirteenth and the fifteenth centuries (Homer and Sylla 1963)—due to the economic practices of the people and initiatives of political elites. Nevertheless, the topic of medieval interest rates has hitherto mostly been dealt with in the context of norms and the theological discourse on usury (Noonan 1957; Homer and Sylla 1963); and more research linking the spheres of theory and practice still needs to be done. As a result of dealing with normative texts, the main hypotheses were related to the anticipated 'ban on usury' and the many ways of undermining it by so-called strategies of circumvention or concealment (Homer and Sylla 1963; Noonan 1957; Gilomen 2011). The usury doctrine in canon law banned all usurious practices. In a very broad sense, this could mean all forms of borrowing money for any interest whatsoever. This ban forced people who tried to avoid the stigma of usury to borrow in secret, thus multiplying their debts. Borrowing went hand in hand with very high rates of interest—so De Roover concludes concerning the connection between the development of interest and capitalism: 'One may conclude, therefore, that the development of capitalism was probably hampered by a high rate of interest' (De Roover 1971, 11).

Consequently, there seems to be a stark contrast between discourse and practices concerning medieval credit transactions involving interest. In spite of the ban on usury, credit and interest were constant elements of the medieval economy, "deprived of monetary reserves and nonetheless criss-crossed by exchange networks of a commercial or other nature. Thus, every man and women found themselves obliged to borrow from time to time to meet their obligations" (Gelpi and Julien-Labruyère 2000, 23).

See reviewed sample studies 45, 56.

Interest Rates in 'Jewish Credit' (Christian Scholl)

In many cases, it is difficult to assess how much interest debtors in fact had to pay for loans borrowed from Jewish moneylenders because medieval mortgage notes commonly do not indicate the exact height of the interest rate, but only a sum which is to be paid back by a specific date. Most mortgage notes only say something about the default interests, which became due when the loan had not been paid back by the date agreed for repayment. In Germany these commonly consisted of two pence (*Heller*) per pound and week. The fact that most medieval deeds on credit contain information about default interests only has induced several researchers of the past to assume that Jewish moneylenders had not demanded any interests at all as long as the loan had been paid back on time. Although this was most probably not the case, it is often impossible to learn anything about interest rates from the main texts of the deeds alone (Scholl 2012).

See reviewed sample studies 47, 57.

Types of Credit (Stephan Köhler and Tanja Skambraks)

Although a systematic and complete overview of all possible types and instruments of credit is not possible here (besides, one should keep in mind that most types of credit that we mention here also overlap), we would like to offer a threefold functional classification comprising the categories 'trade credit', 'consumer credit' and 'labour credit'. Within these categories, different instruments of credit will be described as well. Of course, these instruments are not exclusive parts of this one specific type, but did occur most frequently there.

Credit was not only provided in a linear form by giving a certain sum of money to some debtor. To avoid the interest bearing and therefore ethically questionable loans, a variety of credit transactions approved by the scholastics was known and practised. Among those, the most important ones were the *mutuum*, the *depositum*, the annuity and the *cambium*. The means of compensation if the contract failed—turning into legitimated forms of interest—have been described above.

A *mutuum* stemming from Roman law was, in essence, a free contract. Its object was a fungible item, meaning something that could be weighed, counted or measured. The creditor agreed that a certain item, quantity, or sum could be transferred to and used by a debtor for a certain time. After the time agreed the loan had to be paid back in the same form without any interest. Interest could and was agreed on by stipulation, an extra or attached writ naming the sum of interest. According to medieval canon law, once the *mutuum* ceased to be, it became a usurious contract and therefore sinful. It could be short term or long term.

From the thirteenth century onwards, merchants combined trade with banking business and currency change (as so-called money changers, *cambiatores*). Their equipment was simple: a bench (*banco*, from which our word bank is derived), a blanket to cover it, a pair of scales and of course metal coins (Braudel 1984, 112). A major instrument for their new business was the letter of exchange. The bill of exchange derived originally from the Roman contract of barter (*permutatio*), but it was soon detached from the commerce with wares and was used solely for the purpose of credit (Lopez 1976, 104; Pryor 1981, 100). The operation can be described as follows: One party received a certain amount of money in a particular currency in one place and promised to repay it in another currency at another place. The interest rates for what was in fact a loan were disguised in the exchange rates of the two currencies at different places. This led to controversies about the true purpose of the letter of exchange. While some scholars, like Goldschmidt, interpreted the *cambium* as a transfer-of-funds device designed to overcome the struggles of different currencies (Goldschmidt 1891, 354), newer studies underline its function as credit tool (a contrary opinion was held by Schaube 1894, 176–177; De Roover 1969). It is obvious that even the difference of currency and place could easily be avoided. Nothing stopped the merchants from setting up a second contract reversing the operation, that is to say a transfer of the foreign currency back to the original place and money. This obvious trick was known as *ricorsa* or 'dry exchange', because it included neither wares nor risk for the creditor. The *cambium* was thus a contract of exchange, consisting of an advance loan repayable at another place at another time in another currency. The *cambium* was originally used in financial transactions including the buying of goods in long-distance trade, the most prominent example being the Champagne Fairs, but also as dry exchange or *cambium seccum*—a transaction considered usurious, because it involved the currency change including profit due to exchange rates only, often without any change of place or time delay.

State, urban or rural annuities were a form of long-term credit (as perpetual or life annuities). They were actually acts of selling of the usufruct. By constituting an annuity, the owner therefore sold the right of certain frequent (yearly or perpetual) income from a certain property, not the property itself. The annuity of a piece of land or a house was a common and secure form of lending. The payments were granted in cash or grain (see section "Annuities" in Chap. 10).

The *depositum* was a form of contract, in which someone (depositor) handed something (i.e. an item, a bag of coins) to another person (depositary) for safekeeping (*custodia*). The *depositum* was a gratuitous transaction, meaning nothing was charged by the depositary. The ownership (*dominium*) of the item deposited remained de iure with the depositor, which meant that the (unauthorised) use of the item by the depositary was prohibited. Also, the depositary was liable for any damage or loss of the object arising from fraud or negligence. The deposited object could be handed over at one place and returned at another at the expense (for the transportation) of the depositor. Finally, the item deposited was to be returned on demand or at a previously fixed date.

The depositary had to return—at least in legal fiction—the very same objects entrusted to the depositor. However, in the case of coins or similar items, where the depositor had no special interest in getting the very same coins back, the terms of agreement could permit the depositary to use or consume the deposited items and return an equivalent. This was then called *depositum irregulare* and was by law a loan (Pryor 1981, 165–166; Zimmermann 1990, 205–220). It is obvious that in many cases coins would be deposited with a money changer, who would then use the money to make profit and return the sum (with hidden interest) to the depositor.

Regarding the use of *deposita* in late medieval credit, they can be defined as an investment as well as a loan. If people put their money in a bank or institution like the Monti di Pietà for saving, this money was used as part of the institutions' capital for the pawnbroking business. It could also be drawn from the account by the investor/lender if needed.

After these basic instruments of credit have been defined, we can tackle the systematisation from a functional point of view looking at three different types of credits according to their context of usage: trade credit, consumer credit and labour credit.

Trade Credit

This section examines one of the institutional foundations of premodern economic exchange, underpinning the importance of payment by credit during that time. The expansion of trade through credit operations during the medieval period (1050–1350) had a huge impact on the economic development of Europe. Crucial to this development was the Commercial Revolution that enabled merchants to draw on the institutions of notaries and Roman law, and the importance for access to trade credit (see section "Commercial Revolution" in Chap. 2). Of special significance for the upswing of commerce were different forms of credit contracts that allowed investments in risky long-distance trade. Finally, the remarkable development in business techniques led to the entanglement of enterprise and credit in the Middle Ages.

Until the tenth and eleventh centuries, Europe lacked financial mechanisms to facilitate the transformation of savings into investments. Those who had savings either hoarded their money or invested it directly for consumption purposes. As a consequence, the economy suffered from the negative effects (i.e. deflation) of hoarding money and from the lack of productive investment. Italy was the birthplace of many credit innovations like new contract forms or trade through agency (*procura*; Le Goff 1956, 39–40; Lane 1966; Braudel 1979). The oldest surviving notarial records from the Genoese notary Giovanni Scriba (1156–1158) give us an insight into the business of his time. An aristocrat from Genoa tripled his investments over two years by giving his capital to another merchant, who at the same time did business with his own funds and doubled his money by doing three business trips during those two years (Lopez 1980, 456). This example illustrates the quantum leap trade did because of the employment of agency or *procura*: the tradesman could, in person or through someone else, be present at many locations at the same time and therefore multiply his business operations (see Chap. 4).

Credit gave money the same omnipresence. Without trade credit it would not be possible to explain how an inferior amount of quality and quantity of money compared to the Roman Period managed to meet the demands of a growing volume of trade and services in the Middle Ages, without provoking a real price decline, but on the contrary causing a rise in prices (Lopez 1980, 456). If the sum of all payments performed in an economic system rises, given the same amount of money, the velocity of circulation of money has to grow. This means that an increase of money causes basically the same effect as the rise of the velocity of circulation of money. Economically it does not matter if a coin changes owners several times (because of a lack of sufficient cash) or if there are larger quantities of cash available, as long as it fosters the conclusion of economic contracts (Braudel 1985).

Medieval Trade and Credit Contracts: *foenus nauticum, commenda and compagnia/societas*

Although some studies about specific forms of medieval trade contracts exist, the history of the law of contract during the Commercial Revolution remains to be elucidated (Pryor 1983). The best overview about the different medieval trade contracts in the Mediterranean is Lopez and Raymond (2001). A prior condition for the Mediterranean and European-wide use of trade credit was the existence of statutory and maritime law in the cities, like the *Consitutum Usus* in Pisa or the *Consolat del Mar* in Barcelona. Underlying these city statutes was a much wider body of unwritten customary law: the so-called *lex mercatoria* (merchant law or custom of the sea). Law was continuously improved to satisfy the needs of everyday commerce.

Among the oldest surviving contracts we find the sea loan (*foenus nauticum*). Like the ordinary loan it offered money for an interest charge; however, the lender did not enter a business partnership with the creditor. The restitution of the loan was extended for the duration of a single or round-trip overseas voyage of a ship. Return rates of 33.3% appear openly in business contracts. But if the trade operations ended in a total loss because of shipwreck or piracy, the debtor was not supposed to pay anything back. This was expressed by the formula *ad riscam et fortunam Dei, maris et gentium*. This clause enabled merchants to claim that the interest rate was not usurious but rather an 'insurance premium' against force majeure. Pope Gregory IX differed from that point of view and declared the sea loan to be usurious between 1227 and 1234 in his decretal *Naviganti* and consequently to be forbidden. Shortly after that, the number of sea loans declined remarkably but trade still needed other forms of close collaboration than that of a straight loan (De Roover 1969, 16).

Thus, the *commenda* came into being. The *commenda* (or *colleganzia* in Venice) was by far the most common contract for medieval trading operations. The business partners were referred to as *socii* (partners) except in Venice and Amalfi, where they were termed *debitor* and *creditor*. Maybe this is a hint to the true nature of the contract. Jurists have discussed at length whether the *commenda*, like the sea loan, is a form of partnership or loan. Since it did not mention a charge of interest rates per se in the contract, it was usually not regarded as usurious. Cipolla described the *commenda* in the following pictorial way:

> Tom gave Dick a sum which Dick then used in business, usually foreign trade. When Dick came back from his business trip, he gave an account of the results to Tom. If there were losses, these were charged against Tom. If there was profit, three-quarters went to Tom and one-quarter to Dick. If Dick had also contributed part of the capital, the profits were divided according to the proportions of capital put up. While Dick was travelling and doing business, Tom stayed at home and did not concern himself with business until Dick's return. (Cipolla 1997, 161)

The money giver (Tom), usually referred to as *commendator*, could also add frame conditions to the contract, like specifying certain directions concerning the management of the enterprise. The money receiver (Dick), or *tractator*, on the other side could with the agreement from the *commendatores* also collect cash funds from other investors by entering new business relationships with them and therefore increase his business turnover. The advantages of this contract are obvious. Risk of long-distance trading was shared and potential earnings were increased. Alternately or simultaneously, merchants acted both as *commendator* or *tractator* on different ships with varying target locations, enabling them to make the best use of their merchandise and money. But maybe the most important point about the *commenda* is the fact that it provided liquid funds for trade by enabling not only institutional dealers but also ordinary members of society to invest their savings with little risk in productive endeavours (Lopez 1976, 76; Pryor 1981, 114–116).

Similar, but more restrictive, was the *compagnia* (also *companhia*) or *societas*. While the *commenda* was best suited for the investment in risky sea trade, the partnership (*compagnia*) contract applied better to inland business and therefore lasted much longer, on average between three and five years. The *compagnia* combined the capital and labour of all partners and the risk was shared according to their investments. If the losses, however, exceeded the investments, the participators were liable for it with their property. Once again this contract helped to pool capital and to share the risks of transactions. The differences between *commenda* and *compagnia* are obvious: Joint and unlimited liability was an intolerable risk for maritime trade, which entailed acts of force beyond control like tempests or piracy. Therefore, the *commenda* lasted only for the duration of the mercantile expedition and the partners only risked their investment (*commendator*) or respectively their labour (*tractator*). The merits of the *compagnia* on the other hand favoured long-lasting enterprises; their unlimited liability enforced their credibility and usually allowed bigger growing rates. At the beginning, companies usually consisted of family members who pooled their capital, but with growing business complexity they were open to more distant family members or even 'outsiders' and finally to shareholders (Cipolla 1997, 163; for the companies as market actors, see Chap. 4).

Enterprise and Investment Credit

These genuine medieval contracts are generally considered as a great step forward in economic development, namely since they allowed for the transfer of surplus from saved capital to the productive business sectors. Especially in societies suffering from chronic shortage of cash, the availability of financial means is of great importance. We can also observe a closer connection between credit and trade. Especially forms like the *Partenreederei* (shareholdings of ships) and early varieties of sea insurance (especially from the fourteenth century onwards) became objects of speculative investments. Merchants, being active in different enterprises at the same time, also showed interest for investments in public domains, for example, as toll or tax collectors or mint masters.

See reviewed sample studies 48, 51, 60, 61, 65.

Consumer Credit

Besides the different types of trade credit described above, people of course made short-term loans for their everyday needs as well. The borrowed money could be used for various needs such as food, clothing, tools, luxury goods or the payment of dowries or other obligations/debts. Credit-based consumption occurred in times of economic crisis and in times of economic prosperity alike. In the course of the Commercial Revolution local and long-distance trade flourished and the living standards of people, especially in towns, rose. In this context more people could participate in the consumption of goods but also in certain investments which they achieved by small loans. After the first wave of the Black Death in Europe 1348/49, people could cope better with the crisis with the help of small credits. Besides Jewish moneylenders and Lombards as well as informal credit networks in charge of providing credits for consumption, in the fifteenth century Italian cities began to establish urban pawnbroking shops and the first public banks emerged. These were able to offer cheaper credit for consumption and investments to the working poor.

Likewise, small loans and pawnbroking as two types of consumer credit are essential but at the same time a thoroughly neglected field of research. One main reason for this seems to be the difficulty in reconstructing informal credit transactions regarding small or even very small sums of money. In spite of this research gap, small loans and pawnbroking form one important basis of late medieval survival strategies of the working poor. Thus, the field of the economic history of small loans is closely related to the social history of the *pauperes pinguiores*, that is, people who struggled at the margin of subsistence, such as small traders, craftsmen, day labourers and also peasants. Small loans could substitute the lack of readily available money in times of crisis and need (Skambraks 2017, 2018). Thus, they were in most cases provided by family members, neighbours, hosts and grocers informally and in form of 'chalking up', leaving no or only scarce written traces (Fontaine 1998, 2014).

Thus, historians are able to trace practices of small loans rather exclusively on a local level, for example in the account books of cities and urban institutions like hospitals, guilds, confraternities and corporations. Apart from these formal institutions, we know very little about informal credit practices. In addition, the successfully arranged transfer of small credit has an even smaller chance of being documented than cases of conflict leaving traces in court registers and so on. Newer approaches deal with credit networks on a micro level and credit as means of societal coherence as well as the development of charity and welfare. Besides, the history of the pawned objects, namely clothes, points to the research field of materiality and premodern standards of living (see section "Materiality" in Chap. 2).

See reviewed sample studies 53, 54, 55, 61.

Labour Credit

The fields of labour and credit are closely linked in the medieval economy. Medieval household structures where maids and servants belonged to a master's household as well as the practice of paying wages partly in the form of food and clothing had enhanced the relationship established between an employee and an employer (Kuske 1927, 73f.). Kuske points out:

> Dazu ist es im Mittelalter geradezu Grundsatz, dass der Produzent seinen Rohstoff, der Kaufmann die auf Wiederkauf gekaufte Ware zunächst

bewirtschaftet und dass er daraus erst den Ertrag schafft, bevor er den Einkauf bezahlt. [In the Middle Ages, it was a matter of principle that the producer first worked on his raw material, the merchant on the goods he had bought on repurchase, and that he first created the profit from it before he paid for the purchase.] (Kuske 1927, 75)

A very concrete example of labour credit linked to production is the putting-out system (Holbach 1991; see also Chap. 3). The major motivation for making this kind of loans was shortage of raw materials. Since these shortages resulting from climatic change, wars, disease or bad harvests struck all members of society, probably most people of late premodern Germany were involved in this kind of debt relation: presumably, most peasants, traders and craftsmen and craftswomen needed cash, seeds or raw materials at some point. Hence, credit offered by merchants or traders to the craftsmen and craftswomen could be short-term credits for consumption or investments. They could also have the form of long-term credits or could even mean that the creditor took over a lender's obligations towards a third person. The concrete forms of labour credit were thus manifold: most prominent were advance payments/loans for outstanding goods or harvests or the exchange of credits. Advance payments for agricultural produce not yet harvested or not even grown yet was regarded as illegal since it was supposed to be doing harm to the common good by effecting a price rise. In Germany, the practice of advance payments for agricultural produce like wine, wheat or livestock was legalised in the sixteenth century on the condition that prices had to parallel market prices (Kuske 1927, 77). This example shows that credit practices were linked to price theory. Further cases of advance payment as a form of credit for proto-industrial production in the German lands are found in the sectors of pottery, fishing, metal production and coal mining (Kuske 1927, 82–85).

The loans were then—if ever, since this type of credit often was without securities—repaid in the form of finished products, goods and labour services. In some cases, tools or working equipment were used as pawns when short-term cash was needed.

Labour credit has been described as a means of exploitation in some spheres of premodern production that were fiercely contested by the crafts (especially in textile production). On the other hand, labour credit created the basis of existence for many debtors. As a widespread instrument to overcome difficulties concerning supply, production and distribution, it can, even more optimistic, be interpreted as an engine of economic development (Holbach 1991).

Having seen how credit in its various forms linked all social groups in premodern society, in the following section we will take a closer look at these actors, both as creditors and as debtors.

See reviewed sample studies 50, 58.

Main Actors in Credit Transactions

Jews and Christians (Christian Scholl)

This chapter only deals with specialised moneylenders who openly conducted this business.

Jewish Moneylending

The history of credit in the Middle Ages is inextricably connected to the Jews. Although "[e]verywhere [where Jews lived, CS] lending against interest appears as one of the earliest modes of conducting business, as early as the first Halakhic documentation" (Toch 2013, 205), it was not before the twelfth/thirteenth centuries that the Jews began to play a dominant role in the credit business. Whereas in the centuries before, moneylending was just one occupation among others—there is much more evidence in the sources of Jews working in trade, agriculture, administration, medicine, minting and so on—by the Later Middle Ages moneylending had become the most important, but still not the only, economic activity the Jews pursued, at least in Central Europe.

From the twelfth/thirteenth centuries onwards, moneylending formed the economic basis of the Jewish communities (Toch 1998, 8). The financial gains of this activity alone enabled the communities to pay their taxes, which were much higher than those for Christians, and to employ servants, craftsmen, teachers and others working either for the communities as a whole or for individual moneylenders.

The reasons why it was the Jews who began to concentrate on the credit business in the Later Middle Ages are highly debated among researchers. According to earlier research, Jews were forced to enter the credit market against their will because the Christians had allegedly driven them out from all other 'respectable' occupations (Stobbe 1866, 105; Güdemann 1880, 131). Based on this view, until the twenty-first century, researchers believed that there was a "linear progression whereby moneylending replaced trade at a later stage" (Toch 2013, 205). As Michael Toch has recently shown, however, this view is too simplified because it does not take into consideration that Jews had already been working as moneylenders before. The view that the Jews entered the credit business against their will, finally, is born of the Jews' defence against racist accusations of an innate disposition of Jews towards money (ibid.). This does not mean, of course, that there was no exclusion of Jews from certain occupations in the Later Middle Ages, but the Christian measures of exclusion at least cannot be the only reason why the Jews became more and more involved in the credit sector.

The Jews' concentration on credit was certainly alleviated by the Christian discussions on usury, which became intensified from the twelfth century onwards and which made it increasingly difficult for Christians to lend money against interest. Little finally linked the Jewish involvement in moneylending to the Commercial Revolution (Little 1969; Lopez 1976, see section "Commercial Revolution" in Chap. 2) and indeed it might hardly be a coincidence that lending against interest became the main economic activity of the Jews just when the Commercial Revolution started. During this revolution, credit was the only means of overcoming the obstacle of scarcity in liquid money. Probably, the Jews were well prepared for this business because in the centuries before, they had been active in trade, minting, currency exchange, financial administrations and even moneylending itself. Thus, it was presumably a combination of several factors, including the growing social exclusion of Jews by Christians, the Christian bans on usury for fellow Christians (see above), and especially the rapidly increasing need for cash and capital triggered by the starting Commercial Revolution that caused the Jews' concentration on the credit sector in the Later Middle Ages.

Scarcity of cash was especially prominent in the cities, where neither trade nor mercantile production would have been possible without the opportunity of accessing money through credit. By entering—or rather creating—the credit business (along with specialised Christian money-lenders, see below), Jewish moneylenders enabled the cities to enhance trade and production and thus to grow economically. The permanent need for money helps to explain why city councils were so keen on admitting Jews to their cities. As numerous privileges both from Germany and Italy (*Bürgeraufnahmebriefe* north of the Alps, *condotte* in Italy) show, in the Late Middle Ages the city councils accepted Jews as citizens on the condition only that they lent money against interest. In territories, princes settled Jews especially at such locations that were destined to become urban centres of trade and commerce (Haverkamp 1985). Thus, Jewish moneylenders accelerated urbanisation processes which had begun in the High Middle Ages.

A further reason why Jewish moneylenders were so important for the late medieval cities is the so-called *Schadennehmen* (literally "to take [out a loan] for/against damage", translation by Toch 2013, 209), which constitutes a form of insurance against credit default. *Schadennehmen* means that a creditor borrowed the money his debtor had not paid him back from another creditor (= the Jew). The latter then demanded the money—including interest—back from the debtor (on *Schadennehmen* cf. Mentgen, 543; Scholl 2012, 73). This instrument enabled the functioning of a money market because otherwise the risk of credit default would have been much too high.

Another key prerequisite of moneylending was the so-called Statute of the Market (*Marktschutzrecht*), which protected the receiver of a pawn against the claim for possession of the original owner when the pawn was stolen. All the (Jewish) pawnbroker had to do was to swear an oath that he did not know that the pawn was stolen. As Lotter has demonstrated, this right, which gave the legal security necessary to work as moneylender or pawnbroker, originally stemmed from the Talmud and was introduced into Christian legislation on initiative of the Jews (Lotter 1990; Toch 2013, 211).

The need for skilled moneylenders increased after the pogroms of the Black Death, during which most Jewish communities in Central Europe were destroyed and most inhabitants—among them the moneylenders—were murdered. After 1350, the shortage of moneylenders was so high that the city councils competed with each other for the few remaining ones. They did so by granting privileges to Jewish communities, which went so far that the city council of Zurich, for example, exempted all Jews from tax for the first years of their resettlement in the city (Darman 2009, 279). Other cities granted similar privileges; Ulm, for example, allowed Jews to take the interest rates they wanted, whereas Christian moneylenders were not allowed to take more than 10% interest (Scholl 2012, 204). However, the significance of Jewish moneylenders declined from the late fourteenth century onwards. The main reason for this was the pogroms of the Black Death, which reduced both the number of the communities and the number of their inhabitants considerably. Simply because of their reduced numbers, Jewish moneylenders could not be as important for the economy as a whole as they had been before 1350. In some places, for example Nuremberg and Ravensburg, Christian traders adopted the role formerly performed by the Jews. This does not mean, however, that Jewish pawnbrokers could not play an important role in small-scale economy in individual cities, for example, Constance (project by Gerhard Fouquet in progress). But despite the fact that the number of Jewish moneylenders had been reduced and that many of them had been replaced by Christians in several cities, it was obviously still impossible to do without them at all. This becomes obvious when looking at several cities in Italy: Many of these, among them Venice, expelled the Jews from the area within their walls, but explicitly allowed them to settle in the cities' hinterland or *contado*. The same policy was carried out by the city of Ulm north of the Alps: the city council expelled the Jews in 1499, but resettled individual moneylenders in several villages belonging to Ulm from the 1520s onwards (Scholl 2012, 363). Obviously, it had become impossible to satisfy the citizens' credit needs once the Jews had been expelled.

Christian Moneylending: Lombards

Nearly at the same time when the Jews began to concentrate on credit, another group of—Christian—moneylenders entered this business: the Lombards. Following the definition given by Reichert, Lombards were

(a) of Italian—not necessarily Lombard—origin, (b) they were lending money against interest and (c) they were entitled to conduct that business by a special privilege or licence granted by the ruler (of a territory, town etc.) (Reichert 2003, 1). From the late thirteenth/fourteenth centuries onwards, the term 'Lombard' became synonymous with 'Cahorsins' (*Kawertschen*). The latter term originally went back to Cahors, a city in Southern France, and to the merchants doing business outside Cahors. But from the early thirteenth century onwards, 'Cahorsins' referred to any foreign usurer, before the term adopted the same meaning as 'Lombard' (Schlunk 1991).

The first 'Lombards' were traders from Siena and Asti. Whereas the Sienesi began the business of moneylending in Champagne, where they originally had come to visit the famous Champagne Fairs, the Astesani had opened their business in Paris (Reichert 2002, 279). During the thirteenth century, Lombards spread over France, Burgundy, Savoy, the Netherlands and the Holy Roman Empire up to the river Rhine. Approximately, the rivers Rhine in the East and Rhône/Saône in the West formed the borders of the area where 'Lombards' were active. They reached the height of their settlement in the first half of the fourteenth century (ibid., 280). Lombards established so-called *Leihtafeln* (*casanae*, *tabulae* or *tables de prêt*). The way they practised their profession was very similar to that of the Jews; for example, they demanded the same interest rates, had clients from the same social classes, were settled by rulers for the same reasons and they likewise aroused great hostility for demanding interest. They often had to suffer from the same measures taken against Jews, among them the liquidation of debts, special taxes, expulsions and so on. At the beginning of the fourteenth century, for example, Louis the Fair, King of France, expelled both Jews and Lombards from his territory. However, there was no similar pogrom against Lombards as had taken place against the Jews from 1348 to 1350. Since Lombards and Jews worked very similarly, it is no surprise that they competed with each other in many places. Wherever Lombards were settled, they tried to gain a monopoly of lending money, which was directed both against fellow Christians and the Jews. The latter, on the other hand, tried to prevent the settlement of Lombards at places where they had settled down before, for example, in Cologne in 1266. The fact that there were many locations where both Jews and Lombards were lending money, however, shows that the attempts of both groups were hardly crowned by success (Irsigler 1981; Reichert 2002). Apart from rivalry and mutual replacement—in Freiburg im Üechtland, for example, Lombards were replaced by Jews in the early 1380s (Utz Tremp 2012)—there were also cases of a close cooperation between Jews and Lombards, for example in Burgundy, where Jews and Lombards lent money from each other to get through periods of money shortage (Holtmann 2003, 274–285).

See reviewed sample studies 47, 62.

Cities and Hospitals (Tanja Skambraks)

In the Later Middle Ages institutions like hospitals and cities became important regulative but also creative forces in public financial and credit economy. In the fifteenth century, urban authorities and elites stressed that they had to provide the town's inhabitants with credit in the name of the common good. Thus, some preforms of what today would be called a 'welfare-state' become discernible. At the same time, Western and Southern German cities like Cologne or Frankfurt/Main also forced state loans on their inhabitants in order to finance their needs, for instance by selling rents and levying taxes. Sovereigns secured their debts by pledging land, income from legal courts, toll, coinage tax or excise taxes, form mills and other rights. The case of payment default often led to gradual loss of influence on the sovereigns' side, but to an increase in independence on that of many towns and cities (Kuske 1927, 104; Fouquet 2014). The most prominent tools of urban credit since the thirteenth century in Germany were life annuities and perpetual annuities (see section "Annuities" in Chap. 10). They rendered between 3.5 and 4% gain in the fourteenth century. Both were forms of contracts, not really credit transfers, since the buyer (e.g. an inhabitant of one town) bought an annuity from the town. He had no right to reclaim his money, but was provided with regular payment of a small sum for the rest of his lifetime or even eternally (received by his/her heirs). Just in case the buyer of the rents failed to pay the rent, a debt and therefore credit relationship was created. Kuske sees in the life annuities the transfer of the rural form of *precaria oblata* or *remuneratoria* to the town, which would be paralleled in the selling of a certain part of land, whereby the seller kept his right to live and use the land as long as he lived. Most members of society were involved in these transactions, often one investor received various rents from various places. By making annuities transferable as promissory letters, cities developed early forms of securities trade. The transfer of a rent payment to another person was often organised by public banks providing cash remittances.

Within cities, hospitals were further important actors in the credit system (Drossbach 2007; Fischer 1979; Rabeler 2004). Since the 1970s hospitals have become an important topic of research on urban economic institutions (e.g. Militzer 1975). Originally places of shelter for travellers and pilgrims as well as charitable institutions for the poor, sick, orphans and the old, hospitals also became important actors in credit transactions. Besides their different types of administrative bodies (the church, the commune, fraternities), hospitals had different basic functions: they served as schools, homes for old people, meeting places and also financial institutes, thus showing the dynamic process of social development and functional differentiation of economic institutions in the Later Middle Ages. Hospitals can be regarded as institutional expressions of charitable thinking in the Middle Ages, especially connected to the mendicants and their economic ethics. The changing image of money and its use since the thirteenth and fourteenth centuries led to a development of certain forms of Christian credit of which hospitals and a growing number of semi-religious groups and fraternities were the first protagonists. Since their existence was essentially based on the income (interest) from the lending of foundation capital, the wealthier institutions in particular played an important role as lenders within the urban economy. As public institutions they not only provided alms for the poor, but also small-scale credit. They transferred money with the help of merchants and letters of exchange throughout Europe, thus creating a profitable symbiosis with laymen. Furthermore, members of the convent pawned objects with local money-lenders for credit or took loans without security (Meyer 2007, 83, 86, 91).

In the course of the thirteenth century they often achieved independence from the church and were not seldom administered entirely by the cities or laymen, like in the most famous case of the *Ospedale Santa Maria della Scala* in Siena (Isaacs 2002). Financed by pious bequests of many inhabitants of a town, hospitals lent money to their customers but they also were debtors of other institutions. The sources we can use for studying hospitals as medieval credit institutes are manifold: statutes, charters and account books all point to the normative regulations as well as to the practices of credit transactions.

See reviewed sample studies 46, 60, 61, 64, 67.

Peasants (Tanja Skambraks)

Although all social groups were linked in premodern credit networks, some among them are more difficult to trace than others. Peasants and rural credit networks are still being less studied than urban credit (and its connections to the countryside), Jewish moneylending or traders as credit actors. Some earlier works concern the link between the German peasant war and the economic situation of the peasants (cf. Gilomen 1998, 103, with further literature) in the fifteenth and sixteenth centuries. Nevertheless, sources from manorial or village courts, post mortem inventories and sometimes even notary acts clearly show the entanglement of peasants in manifold credit relations, very often interlinked with the manorial and feudal system of land tenure and its cultivation. Questions of rights of land usage, hereditability of those rights, reduction or increase and renewal of lease are most prominent in those sources. Here—and very closely related to labour credit—we see a culture of indirect debts resulting from delayed payments, outstanding labour services or rents that kept peasants within a tight corset with little ability to act in premodern economy, both as creditors and as debtors (Pfister 1994; Briggs 2009; Sreenivasan 2004). That rents were considered destructive by contemporary theologians for peasants (*rustici*) too, is proven by a commentary on a papal bull called *Regimini universalis* from 1425 (Gilomen 1998). Although Pope Martin V had decided that rent contracts were not usurious, the commentator Job Vener from Strasbourg stated that it should be forbidden for peasants and simple laymen to buy rents at all, since that was supposed to lead to a stop of commerce and lead to a desertion of agriculture giving way to neglect, idleness and inertness. He concluded, furthermore, that the heaviness and overcharge of loans, census and interest would end in murder amongst the people. In this traditionally sceptical perspective of many theologians, rural credit was regarded as a danger to the social order and wellbeing of the whole society.

The entanglement of peasants in credit relations also becomes clear in the following examples: peasants in medieval Swabia had to pay the *Erdschatz* to manorial lords, a fee for leasing a part of land, which in cases of frequent death became due more than once in a lifetime for a family (Sreenivasan 2004, 10). Additionally, there were grain rents and cash rents to be paid, not to forget extraordinary expenses, for example for reparation work, animals or tools. On the other hand, times of crisis like the Black Death also raised the position of the peasantry, whose work now became more expensive, and they therefore could also negotiate for more freedom and rights concerning rents, inheritance or levies, as in the case of the peasants of Ottobeuren (Sreenivasan 2004, 16–18). The payments and duties inducing the need for credit were due to several institutions. Besides the feudal/manorial lords (for example, a monastery), the peasants were also liable to nearby towns, for instance as tax payers.

Pfister names three main instruments of rural credit for the premodern period: first and foremost is the mortgage loan, which means that a debtor sold a perpetual or life rent (*Zins* or *Gült*) which was secured by land. In principle they were repurchasable. The second one is sales credit with deferred payment (*Kaufschuld*), which enabled the buyer to pay in instalments and thus on credit. Such credit transactions were sometimes fixed in written form at village or town courts, and thereby made legally enforceable. Third, and much less easy to trace, there was the so-called debt on hand (*Handschulden*), an informal credit instrument, where an oral promise and handshake were used to complete the petty financial transactions without any security. Producers of agrarian produce might be involved with townspeople or traders in such risky credit relations. In many such transactions alternative forms of documentation like tally sticks might also have been used. Late medieval peasants mostly took their credits from manorial lords, family members, richer neighbours, parish churches or monasteries or other charitable institutions like hospitals. Due to a lack of intermediaries but also to spatial proximity, social relations between individual creditors and debtors were often quite close. Credits were taken for investment in seeds or equipment and consumer credits in times of crisis (mostly caused by bad harvests), or as part of needs connected to the life cycle, like marriage, childbirth or death. Peasant credit comprised most forms of credit presented in this chapter, but certain specific forms stand out. Peasants made loans in the form of *emptio rei speratae*, on vine, grain etc. which was not harvested yet (Gilomen 1998, 107); interest was paid in the form of victuals, like vegetables or wine, merging the spheres of commerce, production and credit. The pledging of land or vineyards was also not uncommon (Gilomen 1998, 112). Another frequent form of peasant credit was livestock lease (Rippmann 1990), which can be linked to changing patterns of consumption in the Later Middle Ages, putting more emphasis on meat and dairy production. For merchants and other town inhabitants, even for hospitals and monasteries, the lease of their livestock to peasants was a profitable investment and likewise also allowed peasants some profit from the produce. Production and credit were also linked in the putting-out system controlling village-based production of tissues and textiles especially in fifteenth century Southwestern Germany. Selling rents secured by land was a common practice in the fifteenth century in the Southern German region of Allgäu, where 70% of peasants held their land free of charges (Gilomen 1998, 124). This development led to the aforementioned overindebtedness of peasants and stagnation of productivity culminating in the abandonment of land by peasants. The terms of short-term credits were usually up to six months, rarely over one year (Briggs 2009, 218). Peasants were thus fully immersed in premodern credit systems and therefore able to "respond to economic change and to emerging opportunities" alike (Briggs 2009, 223).

See reviewed sample studies 50, 58.

This overview has offered a brief description of a choice of instruments, forms and functions as well as actors of premodern credit, which has to remain incomplete. Certain economic actors like monasteries, kings or noblemen as creditors and debtors have not been regarded in great depth here. They have been well documented and studied elsewhere. In spite of these gaps and by the choice of topics presented here, we wanted to put emphasis on subjects that until now have been less in the focus of research, like peasants and credit or small loans.

Credit was not only a way of providing money for investments, enterprises or consumption, it was also a means of establishing or undermining social coherence in premodern societies. Consequently, we would like to plea for a wider understanding of credit to bridge the gap between financial and social history. This approach will be visible in the reviewed sample studies illustrating the methods and sources on credit.

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6

Reviewed Sample Studies on Production

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A total of 68 reviewed sample studies provide an insight into how economic history was, is and can be done in practice. The reviewed sample studies contribute to the research questions outlined in Chaps. 2, 3, 4 and 5. They do so by focusing on the economy of the Holy Roman Empire. They thus lay the foundations for combining the current debates on premodern economic history with the diverse and thorough research studies on the Holy Roman Empire.

At the beginning of each reviewed sample study, we highlight the methods and sources employed in the respective work. Different methods and sources are arranged in alphabetical order. Readers who want to learn more about the method or source can look them up in the glossaries (Chaps. 9 and 10). The reviewed sample studies give concrete examples of how and to what end the methods and sources are applied. Each entry begins by naming the reason why we picked this particular reviewed sample study: Is it an example of a typical analysis, or does it employ an innovative methodological approach? Does it analyse well known sources of economic history, or does it make new sources accessible? Does it form part of a fierce debate, or is it a study many researchers rely on? Each entry then sketches the main results of the study, and describes the methods which the study employs and the sources it exploits. The entry concludes with some ideas on how the findings, methods or sources can be inspirational for further research.

The reviewed sample studies are grouped into the three main areas which structure this book, namely, production, market, and money and credit. Some studies do not clearly belong to one area only, but each study has been assigned to either production or market or money and credit for the sake of clarity.

Reviewed Sample Study 1

The Economy of Cistercian Nunneries (JULIA BRUCH)

Bruch, Julia. 2013. *Die Zisterze Kaisheim und ihre Tochterklöster: Studien zur Organisation und zum Wirtschaften spätmittelalterlicher Frauenklöster mit einer Edition des „Kaisheimer Rechnungsbuches“*. Berlin: LIT Verlag.

Methods: comparison, microhistory, source interpretation/hermeneutics, source presentation/edition

Sources: charters, chronicles, monastery accounts

This study is presented here because it examines the economic sector of six Cistercian women's monasteries and thus illuminates the economy, the economic functionaries, the organisation of economy and the integration into the (economic) system of the Cistercian order from the perspective of women's monasteries. Six microstudies mostly based on source interpretation on the women's monasteries, all of which are assigned to the Cistercian Kaisheim, are prepared and compared with each other. The nunneries are Kirchheim (by the Ries), Niederschönenfeld, Oberschönenfeld, Pielenhofen, Seligenthal (near Landshut) and Zimmern (by the Ries). It is precisely the comparative perspective and the focus on nunneries that allows hypotheses on the Cistercian economy in the thirteenth and fourteenth centuries to be formulated, which are highly suited to follow-up studies, for example, on Cistercian monasteries and nunneries of other locations, in order to sharpen our image of monastic economy.

The study found that the women's monasteries of the Cistercians of Southern Germany functioned quite autonomously in the economic sector, and the organisation within the monastery and the monastic economy were the responsibility of the nuns. In addition, the distribution of offices in the individual monasteries is largely similar and does not differ fundamentally from that in the Cistercian monasteries. Already in the thirteenth and fourteenth centuries, women's monasteries relied on a mixture of their demesne economy (*Eigenwirtschaft*) and rent economy (*Rentenwirtschaft*) and still had a quite large number of lay brothers well into the fourteenth century. The nunneries were also—and this is a new finding—strongly integrated in the Cistercian order, were economically looked after by the monastery of Kaisheim and were accountable for their economy during the visitation once a year.

A book of accounts has been preserved from these visits, which was kept by the Kaisheimer monks. The auditor was the current Kaisheimer abbot, and the officials from the economic offices as well as the respective abbess presented their accounts. Ritually integrated into the normally three-day-long visitation, accounts were audited once a year in all Cistercian monasteries. The abbots of Kaisheim are distinguished not only by their care in the execution of this statute of the Cistercian order but also in the written record of this process. The study takes advantage of this extraordinary source situation and evaluates this document of monastic and order-specific organisation as a snapshot of the economic sector of the women's monasteries involved. The accounts are preserved for the years 1288 to 1360 and are thus not only very early accounts for the German-speaking region, but also include the years of the great plague. The findings from the accounting book were supplemented by the preserved charters and other monastic sources such as chronicles and liturgical sources. Within the study, the Kaisheim accounting book is entirely edited. Thus, the book not only provides an historical analysis but also a source presentation. The accounts are in Latin, and the transcript of the text clears the abbreviations and provides a critical apparatus for easy use.

These accounts cannot be evaluated as serial economic sources—a real series of accounts is seldom handed down for the Middle Ages—as they were not complete for each year, the time of the accounts fluctuated strongly and also the accounting persons and officials always varied. The example shows the (economic) historian impressively that premodern accounting followed a different logic than accounting today and must therefore be evaluated differently.

Reviewed Sample Study 2

Mining (IVONNE BURGHARDT)

Burghardt, Ivonne. 2018. *Der Edel- und Buntmetallbergbau im meißnisch–sächsischen Erzgebirge (1350–1470). Verfassung – Betriebsorganisation – Unternehmensstrukturen.* Dresden: Landesamt für Archäologie.

Methods: descriptive statistics, prosopographic analysis, source interpretation/hermeneutics

Sources: accounts, charters, urban administrative sources

The study of Ivonne Burghardt is a detailed analysis of the causes and consequences of a long-term depression in the mining activities in the Late Middle Ages for a mining district in the Erzgebirge (Ore Mountains).

Mining had been one of the most important economic branches in the territory of the margraves of Meissen, from the House of Wettin, since the discovery of rich ore deposits in the year 1168 at Freiberg. The study fills a research gap by analysing almost all surviving sources from the period of 1350 till 1470 and subsequently presenting a detailed description of the course of a depression in an economic branch that was substantial for a whole region. Burghardt follows two different methodological approaches, which have been proposed by Schirmer (2000) and Westermann (1984). The former suggested a detailed analysis of the surviving accounts of the mint and mining officials in Freiberg in order to expose significant decreases in the silver production. Westermann recommended focusing on the people that participate in any economic and/or legal way in mining. Burghardt combined both procedures by adapting Westermann's suggestion to the local circumstances in Meissen and analysing the sources for legal, administrational and economic changes regarding the princes of the House of Wettin, the mining officials and the persons who were in any kind involved in mining activities. Her sources are documents concerning political or economic measures of the sovereigns, like coinage instructions (*Münzbriefe*) or the accounts of the mint and mining officials. For prosopographic research concerning the mining officials and the mine owners and workers, Burghardt for instance utilised appointment charters (*Bestallungsurkunden*) and municipal and conviction registers (*Stadt- und Verzählbücher*).

Burghardt began with an evaluation of the accounts of the princely mint in Freiberg, which survived from 1353 to 1369 and 1391 to 1470. Those are protocols of the settlement of income and expenses, of the princely mint and mining and therefore among other things they list the amount of silver which had been sold to the mint master in Freiberg. Since all silver from the mines had to be sold to the mint, the amount of silver in the accounts can be taken as a general indicator of the yields from the mining. But these financial records display all characteristics of an early and immature accounting technique. They extend over irregular terms and sum up most of the items. For instance, they do not record the silver by its origin. Therefore, indications of a depression in silver production had to be validated by other figures in the accounts. Some of the special income and expenditure items in the accounts had to be defined for the first time. Concerning the decreases in silver production that were pointed out as serious, because they were simultaneously accompanied by long-term downturn of other mining relevant items, Burghardt analysed further sources for the reasons and the effects of this exposed decline. Contrary to former assertions Burghardt proved that there was no significant long-term regression in mining activities by the period from 1350 to 1400 in the Freiberg mining district. Due to prosopographic studies, short-term declines in the amount of silver, which had sold to the mint, or of the *Zehnt*, could be explained by individual problems of the officials in the mint administration.

By investigating the accounts with basic descriptive statistics, two heavy long-term declines were able to be identified in the period from 1382 until 1427. As a first reason for a significant economic development in the mining branch you could see the division of the territory of the Wettins (*Chemnitzer Teilung*) between the three princes in 1382. Although the sovereigns constituted a continuation of a mutual supervision to all mines, every prince now had a mint master of his own in Freiberg, who struck individual coins. One consequence was a massive debasement of the coins, which every prince undertook to finance his individual expensive territorial acquisitions and military expeditions. This affected not only the miners, who worked for wages, but also all miners and shareholders of a mine who got worse coins for the same amount of silver. By analysing the accounts of the *Zehntner*, Burghardt could show that almost contemporaneously a fatal adjustment of the *Bergzehnt* had been undertaken, in order to increase the profit even more. The miners no longer paid 64 groschen per talent for the mined ore, but rather up to 87 groschen per talent to the princes. At the same time the municipal and conviction register not only documented a significant increase in crime and economic decay in the mining sector. The numerous entries concerning acknowledgements of debt, the issuance of debenture bonds, disputes about financial issues, capital loans of large sums by private persons and the sale of regular sources of income in the register, showed that the economic crisis had afflicted a great number of the town's population. In the 1420s, this affected the wealthy families, who were owners or shareholders of mines. The sources concerning the Wettins showed that they at that time ceased to borrow money from the rich people in Freiberg but took Jews as financiers.

The lack of mining-relevant documents from 1410 until the 1430s demonstrates that the Wettins had disregarded this fatal development in the mining sector almost completely. A long-term result was a gradual decay of the mining administration. Not until the 1440s, when the silver production was at its lowest point, did the sovereigns initiate consultations between their counsellors, the mining officials and the mine workers. The consultations went on for over 20 years and produced more than 50 protocols. They documented that the princes took desperate measures, but made it even worse, because mining administration had not been working properly for decades. For example, as the miners were given a higher price for the silver at the mint for a limited period of time (*Münzfreiheit*), the mines were rapidly and ruthlessly exploited (*Raubbau*). In the end it took the Wettins more than 30 years to increase the silver production, but it never reached the level of the time before the first decline around 1400.

The study serves as an example demonstrating that a detailed analysis of a mining depression in the Late Middle Age is possible. Further studies could concentrate on the late medieval mining depression in other important mining districts. Only a slight modification of the methods is necessary, concerning the sources that survived in the different mining districts.

Reviewed Sample Study 3

Clocks and Time (JULIA BRUCH)

Dohrn-van Rossum, Gerhard. 1992. *Die Geschichte der Stunde. Uhren und moderne Zeitordnungen*. München: Carl Hanser.

Methods: source interpretation/hermeneutics

Sources: accounts, chronicles, court records (urban), merchants' books, merchants' letters, statutes, theological tracts and sermons, travel books, urban administrative sources

The history of the mechanical clock is understood and seen as a mirror for the process of European modernisation and was directly influenced by the reflection on the temporal structure of everyday life in modern industrial society. This change in time awareness is intertwined with the history of the clock as a technical means of timekeeping. According to Dohrn-van Rossum, control and use of everyday time and clock ownership have become indicators of modernity.

The history of the mechanical clock can be told as a history of technology, as a history of consciousness and as a history of mentality, which are all linked together. This assumes that technological change can bring about social change.

Dohrn-van Rossum attaches great importance to public clocks. Life in the city was identified with life led by time (since fifteenth century). The introduction of public clocks was not only a technological innovation but also a social one. At the beginning of the fourteenth century, there were also clocks with non-automated striking mechanisms, but the development of the hourly striking mechanism became a condition for the enormous distribution of public clocks. With the installation of a clock, the modern hour calculation was spread and the medieval hour calculation according to *horen* was replaced (121–124).

Public clocks and modern hour calculation date back to the Italian cities of the thirteenth century. Kings, dukes and sovereigns allowed the new invention to be built in a highly visible and audible manner on palaces and urban towers. The city clock was quickly connected to the city bell and thus became the political responsibility of the town master or the municipality. The municipalities themselves quickly picked up the new technology and acquired a public clock of their own, whereby 'prestige competition' between the cities had played an important role. Public clocks have been increasingly installed since the fifteenth century by direct or indirect state administration in small towns villages—diffusion through administration. In addition, smaller towns and villages also bought clocks on their own. Diffusion began in Upper Italian municipalities between 1300 and 1350 and continues from 1350 to 1360 in large European residences. Until 1370 the distribution in the German Empire can be traced. Until 1410 the larger European cities have built clocks. The diffusion process has a typical S-shape. According to Dohrn-van Rossum, the public clock was an 'index' for urban modernisation and also for the awareness of the contemporary (125–163).

Dohrn-van Rossum also deals with the dissemination of the making trade and concludes that watchmaking did not come from a particular metal trade. The production of different types of clocks and watches was dominated by blacksmiths, gunsmiths and goldsmiths. The group of engineers, who were also able to build clockworks, was characterised by technical handicraft skills rather than theoretical (academic) training. Like most technological innovations of the time, technology spread through temporary and permanent migration processes (164–184).

Working time was now also measured using the new technical methods. The clock towers made it possible to make firm and binding regulations. In this sense, work could be reorganised due to the new calculation of hours. For example, it was now possible to pay day labourers according to hours spent working (266–295).

As a final aspect, Dohrn-van Rossum examines the connection between the new calculation of hours and the perception of speed in the delivery of news or goods. Distances were soon calculated in hours, no longer in day trips, and time controls were introduced (296–321).

Dohrn-van Rossum has chosen a mentality and social history approach to writing technology history by closely examining the sources. The study shows extraordinarily well how the technical innovations influence human beings and is interesting for economic-historical research in a double sense: on the one hand, the invention of new technology and craftsmanship is described in detail and, above all, its diffusion across Europe and into the everyday life of almost every single human being. On the other hand, it explores the interactions with social and intellectual life and not least with economic life.

For his systematic analysis, Dohrn-van Rossum uses all kinds of sources, with the emphasis on edited sources, although archival sources are also included. Another focus is on urban tradition, which is, however, due to the situation of the Late Middle Ages and the question. Some types of sources are particularly noteworthy: chronicles, monastic rules, computers, theological, philosophical, astronomical, mathematical and liturgical writings, letters, accounts, council protocols, police and church orders, statutes (e.g. monasteries and universities), sermons, diaries, books of merchants and court records.

Reviewed Sample Study 4

Water, Hygiene and Fire Control in Medieval Towns (SABINE VON HEUSINGER)

Ewert, Ulf Christian. 2007. Water, Public Hygiene and Fire Control in Medieval Towns. Facing Collective Goods Problems While Ensuring the Quality of Life. *Historical Social Research* 32: 222–251.

Methods: classification/types, comparison, game theory, institutional analysis

Sources: law books

Ewert's study examines the relevance of communal risks in respect to the quality of life in medieval towns in general. Clean water, neat streets and lanes and fire prevention were decisive factors in the determination of quality of life. Pollution by crafts and garbage as well as the destruction by firestorms could lead to collective goods problems. As precautions, municipal authorities made use of administrative measures and regulations, the enhancement of voluntary cooperation and even the transfer of property rights.

Water was the classic common-pool resource in medieval towns: It was necessary as drinking water but also for food production, from brewing to butchery. Crafts like dyeing and tannery needed access to water as well as water mills for energy production. To prevent plagues and infections, the public hygiene was important; its major threat was the custom of using streets and water resources as disposal sites for excrements, dead animals and waste in general. The omnipresence of open fire in workshops and for cooking and heating was a constant source of danger in towns. The article wants to investigate why public hygiene and fire prevention were often insufficient, how communities dealt with pollution by the inhabitants and who was in charge of it.

Ewert shows how the management of quality-of-life-securing collective goods meant dealing with common-pool resources, communal risks and preventive actions. Public hygiene and fire control could only be achieved by voluntary cooperation of urban dwellers. In many cases, municipalities transferred property rights to private persons if investments were too expensive for the community, for example, to build a water wheel; or if the use of a common-pool resource would lead to profit, for example, a public bathhouse would lead to better personal hygiene. The use of collective goods could be controlled by social networks and formal groups; this was, for instance, the case when guild statutes determined the correct use of water. For that reason, the wool guild in Siena or the butchers' guild in Viterbo regulated the access to municipal fountains. Common-pool resources were constantly under the threat of degradation; pollution of common waters was a serious problem in most towns, as was the risk of fire.

Why was the enhancement of voluntary cooperation so difficult? Ewert shows that in medieval towns firstly enforcement was inadequate, for example, due to fines that were lower than the share of contribution. And secondly, people were only willing to contribute to the preservation of the environment when the requested activities were cheap for them. Also, the claim for personal responsibility was guided by budget restrictions. Furthermore, Ewert stresses that environmental degradation and communal risks had grown hand in hand with the continuous population growth since the High Middle Ages; this led to a higher population density in late medieval towns. Only then, Ewert assumes a growing awareness of communal risks, for example, in respect to hygienic matters by upper-class members. Due to wealth and social prestige, these leading families dominated urban politics—in Italy already in the thirteenth century, north of the Alps in the fourteenth and fifteenth centuries.

Ewert's study offers a comparison of various medieval towns in Germany, the Hanseatic region, Italy and France. He analyses the communal risk management problem within an economic framework by using the rational-choice paradigm. Thus, environmental impacts or communal risks are defined as negative externalities, that is, unintentional side effects of human behaviour on others. Using a game-theoretical model known as prisoners' dilemma, Ewert shows that urban dwellers were not able to contribute to the avoidance of communal risks like firestorms or lacking public hygiene. Ewert assesses the population impact on the environment by the I-PAT-approach; the (expected) result shows that a growing population which was richer has a negative influence on the environment. With recourse to the 'Environmental Kuznets Curve (EKC)' he specifies the relationship between environmental damages and wealth more precisely. But in the end, he confines his results: "Rational-choice and game theory cannot explain historical details indeed, but these concepts allow to put the institutional arrangements of the past within a systematic framework" (p. 247).

Ewert's study is mainly based on research literature; and he refers to the law book *Oldenburger Sachsenspiegel*.

Future studies by environmental historians could investigate the threat to medieval towns by earthquakes, drought and flooding—next to clean water and firestorms. Furthermore, the quality of life was also determined by access to food in medieval towns. Crop failure, inflation and famine are promising topics to be investigated by economic historians.

Reviewed Sample Study 5

The Imperial Abbey of Ellwangen and Its Tenants (NIELS PETERSEN)

Ghosh, Shami. 2014. The Imperial Abbey of Ellwangen and Its Tenants: A Study of the Polyptych of 1337. *Agricultural History Review* 62/2, 187–209.

Methods: comparison, descriptive statistics, microhistory

Sources: rural registers

The grade of commercialisation in late medieval agriculture in the Reich is still somewhat unclear. Commercialisation is understood as the increase in production of crops or cattle for sale to the market, as well the sale of a share of the harvest or herd for as high a sum as possible in order to make a profit rather than just allow subsistence and the payment of fees. Traditionally, research tends to see England as a special case in Europe with regard to the level of commercialisation of the rural society in the fourteenth century. On the other hand, theories seem to give rather simple explanations for the dissolution of manorialism in Germany and the direct control of the landlords over their property in England. Ghosh states that this is due to a lack of a comparative view, and that is why he chose a German example to prove existing theories. The main goal is to analyse the economic situation of the abbey of Ellwangen roughly between 1330 and 1350. An introduction to the abbey and its situation is followed by the description of the main source, the polyptych that is mentioned in the title. The analysis of the economic organisation of the abbey and its holdings forms the central part, while the article is concluded by the interpretation of the findings and a comparison to the English situation.

The imperial Benedictine abbey, founded in the eighth century, was situated centrally between the imperial cities of Ulm, Nuremberg, Schwäbisch Hall and Nördlingen. Around the abbey a market and town emerged from the thirteenth century. Several other markets were within a day's journey of the abbey's holdings. The single source used for this analysis is a polyptych (*Urbar*) from 1337 with additions in the following years that records the abbey's holdings and titles and their renderings in more than a hundred locations. The study focusses only on those entries that are concerned with rural property including labour services, while other kinds of income that are not related to agriculture are excluded. Thus, a total of 764 entries form the basis of the study. The holdings then were classified into different types like *Hof* (large holding) or *Lehen* (fief) and different sizes like cottages or small individual holdings, giving a fairly concrete idea of the range of holdings the abbey possessed. Probably the majority of the tenants seem to have been smallholders or even landless. Some could accumulate more than one holding, others held only fragments, suggesting a quite high degree of social differentiation among the rural population. Labour services were due for the harvest, while the number of persons to be sent depended on the size of each holding, so that most households probably had to pay for additional wage labourers. The analysis shows that only 10 per cent of all holdings really provided labour services while the rest commuted this service into a cash payment. While around a quarter of the holdings owed rents in grains and more than two thirds owed poultry, most of these had to pay cash rents additionally. This leads to the conclusion that the economy of Ellwangen's abbey was highly monetised, almost two thirds had to pay money in some form and were thus dependent on realising a cash income, that means producing cash crops or other products to be sold on the market. Those whose payment was due in kind were smallholders who had to create additional income in order to survive, often by wage labour of some kind. Those few rents that were paid in kind were sufficient for subsistence of the abbey but didn't generate a surplus that could have been placed on the market. All these hints to the probable fact that the abbey didn't manage its own lands anymore but relied overwhelmingly on rents, having established a Rentengrundherrschaft.

The comparison between the German example and the general English situation first shows the typical difference: A direct management of demesne land in England and the output of land against rents in Germany. Though some accumulation of holdings can be seen, feudal restrictions still lay very strict on the abbey's tenants, thus stabilising the structure of the holdings. Ghosh resumes that "what we find here [...] is a feudal system without a manorial system, and with a great deal of market dependence and commercialisation". The money that was involved in the whole economic system of the abbey shows that the grade of commercialisation did not differ that much from the English situation, but retained quite a different set of social relations. Nevertheless, especially the lower rural strata seem to have contributed to the commercialisation of the agrarian economy to a significant degree, and this can be found in England as well. The socio-economic change in both regions in the Late Middle Ages still needs explanation. Studies about medieval German rural life still rely heavily on Rösener (1985) and the ideas of Brenner regarding the rise of an agrarian capitalism after 1350 (Brenner 1976) do not satisfy in regard to the newer facts; "feudal relationships might be less significant than levels of social stratification and market dependence".

In his study Ghosh uses a microstudy of one source from one place in order to check current theories on 'agrarian capitalism' and rural commercialisation in England and Germany. The method he applies is first statistical, he categorises the entries in the polyptych and counts the cases. He then analyses their relations and character and then comes to a rather clear idea of how the economic system of the abbey of Ellwangen works by the middle of the fourteenth century. He then inductively places his findings in the general theories and narratives and can thus challenge traditional ideas of how the rural economy was organised at the time.

Reviewed Sample Study 6

Incunabula Production in the Fifteenth Century (KARINA DE LA GARZA-GIL)

Hellinga, Lotte. 2014. *Texts in Transit. Manuscript to Proof and Print in the Fifteenth Century*. Leiden: Brill.

Methods: analytical bibliography, microhistory

Sources: artefacts

The study of book production and text transmission in the fifteenth century must take into consideration the technologies with which the first printed books were produced. The premise should be, ideally, the recognition and consideration of the two technologies developed in that century, the one-pull press and the two-pull press, as well as the restrictions and advantages both technologies offered to early Master Printers. In this volume Hellinga offers deeper insights into book production through no fewer than 12 case studies, most of them previously published by the author but revised and reedited for this volume. In these case studies, Hellinga exemplifies how the printing technologies affected the way in which the text was prepared for reproduction and how the influence of compositor's, editor's and proof-reader's work on the text layout and text presentation (i.e. spelling, vernacular adaptation) becomes evident through bibliographical analyses. Hellinga's text convincingly suggests that the mechanical reproduction of texts is only one station, a transitional stage, into further steps of their ever-changing nature.

The title accurately describes the metamorphic nature of texts once they are reproduced, in this case specifically by means of the printing press, from the moment when it left the manuscript copy (or the printed copy) to further metamorphoses: when worked on by a first hand which prepares the text for its reproduction, marking it accordingly and making first corrections, calculations and additions, then when it reached the hands of the compositors who sometimes left their own *ad libs* in their work (218–27). Afterwards the text was mechanically reproduced, and finally, sometimes corrected during this process.

The main sources of Hellinga's approach are the books themselves, in the best tradition of analytical bibliography and the relevant printer's copies; although an extremely rare occurrence Hellinga provides a total of eight case studies where she worked with printer's copies, an opportunity which should not be underestimated (102–55; 156–67; 201–17; 218–27; 228–53; 304–65; 395–409; 410–29). As reiterated by Hellinga, there are no contemporary sources which describe how these early presses looked like nor how either of the two printing technologies worked. It is through her case studies that she illustrates how relevant it is to analyse the production of the presses (i.e. the books themselves) especially when conducting research about their production.

In the first two chapters of her book Hellinga not only successfully outlines the relevance and the differences between the twofold technological innovation of the fifteenth century (8–66) but also provides a strikingly well-structured synopsis of the organisation of work they both proposed in early printing houses. Furthermore, in her third chapter Hellinga provides an updated list of extant printer's copies, and of doubtful or rejected printer's copies (67–101; for an addition to the list, see Hellinga 2017, 316–24).

In the following 12 chapters Hellinga provides the aforementioned case studies which are in themselves outstanding examples of analytical bibliography as of a methodological approach to the study of text transmission and the production of early printed books. Nevertheless, the case studies are microhistories which depict the versatility and ingenuity of early printers when confronted with technological limitations or prescriptions. It is here where her findings display the true nature of the early printing house: a multifaceted and complex organisation. For example, it emerges from the case study about the production of the *History of Jason* that the text was adapted to meet marketing expectations and Hellinga successfully demonstrates the creativity of the transformation of text within the printing house by discussing several intricate stages of correction and addition (304–65). In the case study examining the first book printed in Oxford (218–27) she outlines the complexity of text distribution in order to organise the work in the printing house and regardless of the technology available for printing.

In short, Hellinga's case studies are based on the thorough examination of the books themselves, in some cases using other sources such as printer's copy, proof-sheets and further contemporary documentation of book production; unfortunately, as mentioned before, these are rare occurrences. The reader will benefit from a substantial amount of sources and relevant literature in every chapter as well as by invaluable tables and appendices which enable the researcher, experienced or novice in the subject of bibliography, to follow-up Hellinga's hypotheses and conclusions. In addition, the volume is accompanied by a detailed subject index which provides quick reference to all stages of book production.

These features, added to Hellinga's vast experience in the field, elevate the volume to the status of a handbook, an essential reference for research related to book production, internal workflows in the printing house and text transmission. However, it will also prove to be indispensable for analyses on book trade, book collection and publishing history in the Late Middle Ages (Hellinga 2018).

Reviewed Sample Study 7

Guilds and Their Functions (JULIA BRUCH)

Heusinger, Sabine von. 2009. *Die Zunft im Mittelalter. Zur Verflechtung von Politik, Wirtschaft und Gesellschaft in Straßburg*. Stuttgart: Steiner.

Methods: classification/types, comparison, prosopographic analysis, source interpretation/hermeneutics

Sources: charters, chronicles, guilds' books, statutes, urban administrative documents

This study on guilds in Strasbourg is exemplary because of the very broad source base—Heusinger use far more than the standard edited normative sources—and the use of current socio-historical approaches. Heusinger examines Max Weber's posthumously published definition of guilds as craft guilds obtaining the role of professional representation. According to Weber's definition, craft guilds had two features: firstly, they wanted to regulate labour and secondly, monopolise products and services by forcing every craftsman and woman to become a member of a guild (*Zunftzwang*). Another depreciation of craft guilds came from the historical school of economics and together they shaped a negative image: Guild cohesion and monopolisation as preventing the development of free markets, dynamic economic life and innovation (summarised: 13–4).

Starting with guilds in Strasbourg, Heusinger sets up a new classification concerned with the organisation, the social, political and economic functions and the relevance of guilds within a medieval city. With this division into functional fields, which was probably inspired by Luhmann's system theory, she leaves old prejudices far behind. Furthermore, she challenges this theory on other important cities in the Middle Ages (Zurich, Nuremberg and Frankfurt/Main), by doing a comparative study. Her research covers the period lasting from the last quarter of the thirteenth century (first guild person identified) to the fifteenth century (1482 seeing the establishment of a new constitution in Strasbourg). Heusinger describes guilds as mobile and dynamic social groups within medieval cities' societies. She proves upward (advancement into the city aristocracy) and horizontal mobilities (changes between guilds). With her study, Heusinger accomplished a reconsideration of social groups and their connections in medieval cities. She questions characteristics of these social groups, possibilities and limitations of social and economic mobility, and the definition of guilds.

As her research approach, Heusinger uses a prosopographic analysis (Petersohn 1975) and gathers more than 6100 entries, including 4000 guild members in a database. She uses various sources written in different contexts. For this database, Heusinger collects extensive information on each person—according to the density of the sources in some cases only name and profession, in other cases more parameters like biographical data or family bounds. Information has been registered in three steps: firstly, office-holders and related evidences; secondly, persons, named together with their profession in the book of charters; and thirdly, persons, mentioned together with their profession in other sources. This database has been made accessible to other researchers either in the form of a CD-ROM as an addition to the book or in the form of an extract printed in the book (focused on guild members). Consequently, Heusinger uses this database for historical prosopography and network analysis.

Whereas former studies were manly based on statutes of the guilds, Heusinger analyses various further edited and unedited urban sources, like Strasbourg's book of charters (till 1400), urban chronicles and guilds' books.

The functions of medieval guilds, which von Heusinger first develops thoroughly and exemplarily from the source tradition of Strasbourg and then tests in Frankfurt/Main, Nuremberg and Zurich, challenge further and comparative studies on guilds, social groups in the city and the urban power structure. The study offers connectivity for both urban social history and economic history.

Reviewed Sample Study 8

The Putting-Out System (JULIA BRUCH)

Holbach, Rudolf. 1994. *Frühformen von Verlag und Grossbetrieb in der gewerblichen Produktion (13.-16. Jahrhundert)*. Stuttgart: Steiner.

Methods: classification/types, comparison, source interpretation/hermeneutics

Sources: charters, chronicles, court records (urban), guilds' books, inventories, merchants' books, notary registers, urban administrative sources

Rudolf Holbach studies the putting-out system and the developing large-scale trades, which have an advanced organisation of work and were designed for profit. He views both forms of organisation as forward-looking but dissociates himself from the older research that has seen the modern 'capitalist spirit' in these organisations. In addition to the questions of the organisation of work and production, he argues that social history issues should be included: What is the relationship between putting-out and large-scale trades with the social change of time? He is interested in the beginnings, locations and distribution of putting-out and of large-scale enterprises, in the procurement of raw materials, production and sales, in the origins and position of merchants, entrepreneurs and producers, in the organisation of production and finally in the legal and political framework conditions (15; 44–6).

Holbach investigates the development of the putting-out system and the approaches to a centralised large-scale trade. To this end, he focuses on individual crafts in different cities and regions, which he typifies and evaluates. He examines the four main sectors of industrial production besides food production, namely the production of textiles, metal, fur, leather and wood. He concentrates on Central Europe in the thirteenth to sixteenth centuries. Holbach is rather sceptical about the concept of 'proto-industrialisation' or 'industrialisation before industrialisation' and would like to exclude this question by concentrating on the early days of the investigated organisations. He uses a comparative approach for his research and, through source interpretation, draws up a classification of the putting-out system (39–46).

Holbach defines the putting-out system rather broadly: The putting-out system is a place of decentralised production (and extraction) of certain products. These were made by producers who, in general, did not work in immediate contact with consumers and were more or less legally independent. They produced for one or more customers and resellers who took over at least part of the financing or equipment. In contrast to this, centralised large-scale production takes the form of manufactories or factories. A manufactory was a centralised large-scale industrial enterprise where manual labour prevailed, whereas research suggests that once machines were increasingly being used, it should be referred to as a factory or proto-factory. Holbach avoids this distinction by referring to centralised large companies (26–38).

In his extensive synthesis chapter (562–594), Holbach compiles his comprehensive research results into a seminal typology of the putting-out system, categorises this organisation from different points of view, and is thus connectable to different research traditions. He classifies the putting-out system according

1. to economic, social and technical conditions of origin;
2. to the social and economic positions of the parties involved;
3. to spatial distance and contact;
4. to the duration of the contractual relationship;
5. to the type of prepayment by the publisher;
6. to the influence of the central agents on production;
7. to the degree of participation and control by the government or public authorities.

The categorisation could be transferred to the centralised large-scale enterprise of the premodern era, as Holbach shows.

Holbach's work provides economic history with a comprehensive set of instruments to classify putting-out systems and to compare them with others.

In addition to numerous special studies on trade and commerce and more general publications on economic and urban history, Holbach mainly uses source editions and *Regestenwerke* as well as selected archival sources: Sources from guild and urban archives like urban registers, notary register, charters, ordinances, city books, chronicles, inventories, court records, guilds' books, merchants' books or house books.

Reviewed Sample Study 9

State Corporatism and Proto-industry (JULIA BRUCH)

Ogilvie, Sheilagh C. 1997. *State Corporatism and Proto-Industry: The Württemberg Black Forest, 1580–1797*. Cambridge/New York: Cambridge University Press.

Methods: institutional analysis, micro-exemplary method

Sources: accounts

In 1997, Ogilvie delivered a pioneering study of the so-called proto-industry in the German-speaking region of the rural commercial area of the Swabian Black Forest in the Duchy of Württemberg. Most people have lived there since the 1560s from producing and exporting worsted cloths called *Engelseite* or *Zeuge*. The manufacture of inexpensive worsted clothes for export was one of two most important industries in Württemberg until 1800. Production took place in villages or small towns (not more than 1500–2000 inhabitants). Besides weaving, the people lived on agriculture. For many families, weaving was a second income. The area examined has all the characteristics of a proto-industry. What makes the interpretation that the proto-industry contradicts the guild organisation of cities impossible, however, is the fact that local sources (e. g. a series of account books) point to a 'regional (rural-urban) weavers' guild in Wiltberg that existed from 1598 into the nineteenth century. There are also detailed sources of a guild-like company of merchant-dyers (*Calwer Zeughandlungskompagnie*; 1650–1797). This is the basis of Ogilve's study: It does not fit into the concept of proto-industry that older social institutions such as guilds and trading companies survived this new structure of production. Her goal is to explain the 'co-existence' of proto-industry and corporate institutions. Other studies point to similar findings: Traditional institutions did not make room for the proto-industry, but continued to exist, sometimes for longer than the proto-industry in the corresponding area (1–4).

Besides the term of proto-industry, Ogilvie works with the concept of 'state corporatism': "In many early modern European societies, the state grew more rapidly than the market, and had a greater impact on society and the economy – not only directly, through taxation, warfare and bureaucratic regulation, but indirectly, by granting and enforcing corporate privileges to existing institutions and interest groups, in return for their cooperation with its military, fiscal and regulatory aims" (5).

Ogilvie argues that the analysis of premodern economies should not be too much about the market, but that other social institutions should also be included in the considerations. Cost is to be understood as opportunity cost, since many goods in premodern societies were not exchanged on the market and therefore had no monetary prices, for example, labour. But the labour that went into weaving could also have been put into agricultural activities. This view also explains why industry was born in barren regions: "the opportunity cost of allocating labour, land and capital to industrial purposes was very low in terms of forgone agricultural income" (6).

Ogilvie begins her reflections with a summary chapter on the theory of proto-industrialisation. She then presents the particularities of the sample region and the link between state corporatism and social institutions. Corporate groups enjoy state privileges like local communities, regional guilds and companies of merchants. With these considerations, Ogilvie explains the connection of the emerging proto-industry with corporate groups and the state privilege.

Ogilvie presents an analysis of the account books of the weavers' guild from Wiltberg (1598–1760), thus highlighting the financial basis of the guild by a quantitative data analysis and a qualitative source study in the sense of a micro-exemplary method. Building on this, she examines—likewise with the help of a quantitative data analyse and a qualitative source study—the entry restrictions in the guild to examine the argument of proto-industrialisation theory, which says that this type of organisation tends to increase the number of producers uncontrollably. A further characteristic of proto-industry is examined by her, namely the perception that production would grow uncontrollably and not in relation to demand. For this question, Ogilvie examines the activities of the weavers' guild and merchant company to regulate the output.

She further examines the influence of state corporatism on demographic behaviour, industrial success and social relationships. After these specific analyses, Ogilvie asks whether this region is a special case and what the social conditions surrounding the proto-industries in other parts of Europe were like.

Ogilvie refers to three questions in her book.

1. The role played by social institutions in the development of proto-industries, and of economies more general

The existing social institutions (local communities, guilds, merchant companies) generally do not collapse with the evolution of the proto-industry, but are rather supported by the emergence of the early modern state from which they received privileges. Certain effects, such as demographic behaviour, do not differ in proto-industrial and agrarian areas, which suggests a strong influence of similar social institutions.

2. The role of mentalities

Proto-industrialisation theory assumes that premodern people have a different mentality than modern people. Ogilvie, on the basis of her research, pleads for not looking at mentalities or a mental development process, but rather at how social institutions influence decisions (such as family patterns, prices).

3. The influence of non-market social institutions on economic and social change

Ogilvie can show that guilds kept their strong influence even on proto-industry until the eighteenth century and also defended their monopoly and monopsony power. Neither the guild nor the merchant companies show strict enforcement of quality standards or targeted promotion of innovations, for example, through monopoly rents or encouraging diffusion by journeymen (447–475).

The study is connectable in quite different aspects, it can be considered as a methodical example in the combination of quantitative analysis and qualitative source study, comparable studies of other rural industrial areas are currently available. In addition, Ogilvie also refocuses our attention on the interrelationship between social institutions and proto-industrialisation.

Reviewed Sample Study 10

The City of Lüneburg and Its Countryside (NIELS PETERSEN)

Petersen, Niels. 2015. *Die Stadt vor den Toren. Lüneburg und sein Umland im Spätmittelalter*. Göttingen: Wallstein.

Methods: classification/types, comparison, micro-exemplary method, source interpretation/hermeneutics

Sources: accounts, privileges, statutes, urban administrative sources

The study analyses the manifold relationship between the city of Lüneburg and its surrounding region for the time roughly between the mid fourteenth and the late sixteenth centuries. This research topic was quite fashionable in the 1970s, when several studies were published on different aspects of medieval town-country relations, mostly on power and economic centrality (cf. Chap. 3). Petersen's survey wants to bind these traditional factors together and at the same time add a new perspective to them. Concentrating on one medium-sized city including a broad scale of elements as exemplary (as it is being done in the survey) makes it more feasible to compare it to town-country configurations elsewhere.

Lüneburg belonged to the bigger towns in the Reich in the fifteenth century, but always remained part of the duchy of Brunswick-Lüneburg. Emerging in the tenth century from three smaller settlements at the foot of a ducal stronghold, it gained communal rights around the early thirteenth century. Economically the most important institution in the region was the salt fountain, located within the city. Salt was scarce in Northern Germany and Jutland, but very much needed for conserving, especially in Hanseatic herring trade. Hence, the margin of benefit in salt production was extremely high. Originally in the hands of the duke, bit by bit it fell into the hands of regional noble families and monasteries. By the end of the fourteenth century the saline corporation came under communal control while the shareholders diversified. The saltpans were owned as property as a whole or in parts mostly by monasteries. They contracted and paid members of the upper-class families of the cities to run the pans in order to produce the salt that consequentially would be sold throughout Northern Europe. A share of the benefit had to be paid to the city as well. This way Lüneburg benefited twice: The leading families could live off the salt production and the magistrate, consisting of the same families, collected money for urban politics. It seems that all communal politics centred around the safeguarding of the salt production and the export into the Hanse trade. At the same time the Saline needed a supply of vast quantities of timber from the region which had to be maintained all year round to keep the pans boiling.

This economic structure influenced to a high degree the structure of the urban presence in the region, as Petersen shows first by analysing the different traditional categories of town-country relationship. The benefit that was generated by citizens involved in the salt production was often invested in landed property in the surrounding countryside up to 20 km/13 miles. The different monasteries that were located close to and within the city further show a complex system of interaction on the basis of property of land and forests, of jurisdiction and personal and economic ties. To a significantly lesser degree the regional nobility was connected to the city. Some of them were taken on as captains, others manned small castles that were held by the magistrate as ducal pawns. In this way the city could maintain communication with the holders of local power and thus keep being informed of what happed in the vicinity.

The turn to spatial topics in historiography that set in in the early 1990s led to a new appreciation of the idea of socially constructed spaces. Petersen uses the urban public construction sector and the flux of municipal money within this system to show that the magistrate purposely constructed landmarks in the surroundings in order to make its sphere of influence visually perceptible. The most important construction certainly was the so-called Landwehr, a fortification that ran around the city in some 7 km/4.3 miles distance. It was used to safeguard urban gardens, meadows and fields and all the other small constructions of the immediate vicinity like brickyards, and at the same time its purpose was to control the traffic that now could only pass through three roads. The castles that were held outside the Landwehr were constantly maintained by urban workers, as was the river Ilmenau that connected Lüneburg to the larger river Elbe and therewith to Hanse traffic systems.

These physical urban outposts were of eminent importance for the safeguarding of urban control of the region, because they could serve as permanent reminders and evidence, while ducal privileges that were paid for with large sums by the magistrate and the leading families, had lost their binding power by the mid sixteenth century. The built elements could still be reproduced on maps, the new form of spatial perception, thereby showing the urban claims. An 'urban land' can thus be analysed in several dimensions: economy, power, communication, physical landscape, property and exploitation. What the survey shows is, to what spatial expression the economic core interest of the leading families led over round about two centuries that saw dramatic political changes during wars and the reformation.

Central sources used were communal account registers that show names of persons involved in construction and the sums of money used and which came from different kinds of income, not least from the benefit that was produced in the salt production. City books that include the collected privileges and municipal legislation open up the system of political and legal instruments used to keep hold of the hinterland and tell a lot of how conflicts over landed property or use of resources like timber were solved. Furthermore, letters that are the physical remains of a communication network can tell al lot of how the power had been organised and maintained.

Reviewed Sample Study 11

Guilds as Economic Institutions (JULIA BRUCH)

Pfister, Ulrich. 2008. Craft Guilds, the Theory of the Firm, and Early Modern Proto-Industry. In *Guilds, Innovation, and the European Economy, 1400–1800*, eds. Stephan R. Epstein and Maarten Roy Prak, 25–51. Cambridge: Cambridge University Press.

Methods: classification/types, institutional analysis

Sources: contracts, statutes

Pfister analyses craft guilds as economic institutions and tests a modern classification on a premodern organisation. Therefore, his research is methodically interesting. Initially, he looks at prejudices against craft guilds which has emerged in the eighteenth (enlightenment) and nineteenth (German historical school) centuries: craft guilds are described as "paradigmatic institution[s] of a pre-capitalist economy" (25), as cartels and communities preventing innovation and being sceptic against new technologies. It is assumed that their members strictly regulated every aspect of life. In recent studies, newer (economic) methods and models are used to analyse premodern craft guilds. Those are: looking at transaction costs in long-distance trade, identifying strategies of craft guilds to minimise information costs and considering the development of human capital in form of transferable skills. Pfister analyses economic effects of craft guilds by using the modern theory of the firm. He focuses "on proto-industries that is, on the regional export industries that emerged between the fifteenth and eighteenth centuries in Western Europe" (27). Thus, he concentrates on groups of people in rural areas of these export industries, for instance, peasants and inhabitants of towns. His focus lies on craft guilds, separating the group of craft guilds into 'guilds of individual trades' (corporation of craftsmen and women with the same profession: weavers) and 'sectoral guilds' (corporation of people working in one industrial sector: silk industry). He also considers the influence of city authorities and further the absolutist state's position towards guild matters and their regulations.

Pfister describes craft guilds as intermediaries between merchants and individual craftsmen, which help controlling agency costs: guilds ensured quality and advanced payments. In order to guarantee quality, craft guilds regulated labour, apprenticeship, access to markets and so on (especially with statutes) and the quality of raw materials being used to fabricate their products. Craft guilds also controlled the type of tools used, and the whole production process (even semi-finished goods). They could delegate this control to an inspector and set up charges for poor-quality products. Sectoral guilds were employed to monitor production processes while dealing with different organisational units of work: workshops, manufactories, putting-out system and long-distance trading. As regards the latter, they had to control different stages of production and different technologies. Pfister argues that in the sixteenth and seventeenth centuries "redundant measurement in a complex production process was solved either through an industry-wide 'umbrella guild' or by means of a system of specialised guilds under strong urban supervision" (43). For the eighteenth century, Pfister finds other strategies like non-guilded workforce in subsidiary production centres or centralised workshops. "This course of events suggests that the use of the guild system for the reduction of measurement and co-ordination problems in production was particularly effective under conditions in which capital or entrepreneurial skills were scarce" (44).

At the end of his study, Pfister discusses the question in which economic setting the guild system operated economically effectively and in which it did not. He concludes: "This is not to say that craft guilds constituted 'optimal' economic institutions; rather, I argue that craft guilds and firms were functional substitutes" (50).

Pfister also extracts a part of the modern theory of the firm and applies it to premodern craft guilds. The "firm can be thought as a network of contracts" (29). He extracts two aspects, which are commonly associated with the mechanism to reduce transaction costs: "the reduction of agency costs through delegated monitoring and the reduction of measurement costs through vertical integration" (30). By working with these concepts, he proves that craft guilds have to deal with transaction costs and try to reduce agency as well as measurement costs while using the instruments described in the modern theory of the firm.

Pfister's research paper is based on former analyses (which mainly used statutes, contracts and reports), rather than on sources, but this can be used as an example for further research; its model can be replicated.

Reviewed Sample Study 12

Transmission of Technological Innovations by Migration (JULIA BRUCH)

In this chapter, I present two papers written by Reinhold Reith (2005, 2008), which discuss the same question with two different points of focus:

Reith, Reinhold. 2005. Know-How, Technologietransfer und die Arcana Artis im Mitteleuropa der Frühen Neuzeit. *Early Science and Medicine* 10 (3): 349–77.

Reith, Reinhold. 2008. Circulation of Skilled Labour in Late Medieval and Early Modern Central Europe. In *Guilds, Innovation, and the European Economy, 1400–1800*, eds. Stephan R. Epstein and Maarten Roy Prak, 114–42. Cambridge: Cambridge University Press.

Methods: classification/types, descriptive statistics, source interpretation/hermeneutics

Sources: artefacts, contracts, guilds' books, statutes

Reith discuss mainly two strategies for the transferring of technology (*Technologietransfer*) in early modern German-speaking lands. He argues that the transfer of know-how took place in craftsmen's workshops in the context of apprenticeships and through geographical mobility. He subdivides premodern mobility of craftsmen into short-term and long-term mobility. The short-term mobility is what can be called the tramping system (*Wanderschaft*) of the guilds, who sent their journeymen travelling through central Europe. This form of mobility is less well examined, but it was more important than the second—the long-term—mobility of migration.

Reith uses this sociological concept for his historical research and combines it with descriptive statistics and source interpretation. He wants to explain the diffusion of technological know-how (knowledge and skills) in different contexts to fathom the mechanism of technology transfer in early premodern times. First, there was a vertical transfer through apprenticeship and second a horizontal transfer beyond a single town or region. Both concepts are based on face-to-face learning, but Reith also discusses the significance of printed manuals or drawings.

Apprenticeship played a crucial role in the process of transmission of knowledge. In the fifteenth century, guilds even used written contracts between apprentices and masters to guarantee sufficient education for apprentices.

After successful completion of a guild apprenticeship, most of the journeymen were forced to travel by guild law: journeyman's tramping (*Gesellenwanderung*); apart from these travelling journeymen, there were seasonal migration of workers and forced migration (like minority migration, migration of religious refugees). Spatial mobility of skilled workers played an important role in premodern society and had an important effect on the diffusion of knowledge.

Reith arguments against Elkar (1999), who doubts that journeymen did exchange their knowledge and skills with the masters and workers of workshops they visited during their travelling. Elkar thinks that masters and the travelling journeymen were not interested in exchanging know-how but in preserving their secrets in crafting. In his opinion espionage and the enticing or recruiting of workers were more important. Reith shows the opposite. In working in foreign workshops journeymen learned the techniques of the local masters. In only a few trades it is possible to prevent workers from learning the used technique (like dyers). Normally, a workshop was very small, and the journeymen were involved in the production process. In small-scale trades a secrecy policy could not have been enforceable. Diffusion of knowledge, as we learned earlier, took place in these workshops by *imitatio*—by imitation of the master's working method. Reith names this course of action a specific working culture which included cooperation between all members of the workshop and contradicts Sombart's concept of a 'natural patent' fixed on the master as person. One idea of the journeymen's tramping was to learn by working in different workshops, gaining technical skills through work experience. During their travels journeymen worked in different regions, cities in various workshops and always brought their experience and know-how with them. The local workshops could also have profited by this arrangement.

Nuremberg was an exception in many crafts. Like in Venice there were 'closed' (*gesperrte*) crafts that wanted to preserve their secrets and protect their technical primary in metal industry. All kind of migration was banned. Their own masters, apprentices, journeymen and workers were not allowed to travel or migrate. This strategy might work, but on the other hand Nuremberg's metal crafts could not benefit from travelling journeymen and were not able to acquire new techniques through this method.

Reith follows Epstein in distinguishing mobility in "permanent migration" and "the circulation of tacit knowledge and skills through journeymen tramping" (131). By mapping journeymen's migration Reith can show that the spatial pattern was significantly different between crafts and regions. Reith can show convincingly that migration caused by guild's tramping system, recruiting and enticement, seasonal work or forced migration lead to exchange of innovation or to innovation itself in exchanging specific know-how.

For further studies Reith's approach is essential, because he has shown that craft guilds provided an institutional framework for the transmission of knowledge within single workshops, into one city or region and in addition in central Europe. People learned their trade through absolving an apprenticeship and after this they had to do tramping. In foreign workshops, they got access to possible different ways of doing the learned craft. The guilds could help these moving journeymen in foreign towns. It is very difficult to prevent foreign workers from learning how things would be done in the workshop. The whole system of learning is experience-based, and if someone worked in the production's process, he would have learned the way of doing things. Technological innovations took place not only in craftsmen workshops; technological innovations were spread all over central Europe through travelling craftsmen. Guilds did not prevent this; rather, they supported innovation and technological change.

In addition to published research results, Reith uses many different types of edited sources for his studies: guild books, statutes of journeymen, contracts of apprenticeship, printed manuals, construction drawings, models and artefacts.

Reviewed Sample Study 13

Division of Labour and Gender (JULIA BRUCH)

Rippmann, Dorothee. 1996. Frauenarbeit im Wandel. Untersuchungen zu Arbeitsteilung, Arbeitsorganisation und Entlöhnung im Weinbau am Oberrhein (15./16. Jh.). In *Weiber, Menscher, Frauenzimmer: Frauen in der ländlichen Gesellschaft, 1500–1800*, eds. Christina Vanja and Heide Wunder, 26–59. Göttingen: Vandenhoeck & Ruprecht.

Methods: descriptive statistic, microhistory, source interpretation/ hermeneutics

Sources: accounts, tax lists

Gender research has put the question of the division of labour into focus. The essay by Rippmann is a good example of this topic. Women's work in the Middle Ages and early modern times was flexible and adaptable, there is evidence that even heavy work such as ploughing and forging was carried out by women under certain circumstances, and a woman was able to replace the male labour force when needed.

In her essay, Rippmann examines women's work in agriculture, taking particular account of historical change in the fifteenth and sixteenth centuries as well as urban-rural relations. She focuses on wine-growing on the Upper Rhine. Her microstudy proceeds methodically on three levels: with a descriptive statistic she looks at medium- and long-term economic trends (development of wages and prices, labour market, consumer habits and production conditions). The second is a source interpretation with the aim of sounding out the "horizon of experience (*Erfahrungshorizont*) and human observations" (e.g. described work processes) (28). The last level refers abstractly to the mentalities that indirectly emerge as patterns of thought and evaluation, for example, in wage scales.

The work on the lordly vineyard, a labour-intensive special culture, was done by farmers who were obliged to do customary labour service (*Frondienst*) and by day labourers. This organisation, especially the performance of customary labour service, was exertive, especially because the main operations had to be carried out by adult women and men. Customary labour service (at least 15 to 20 days a year) had to be carried out between the end of February and November, at the time when manpower was needed on the parcels. In the villages, there were very few wealthy farmers (minimum 9–13 hectares of farmland) and very many farmers lived on medium-sized (5–7 hectares) and small farms (less than 3 hectares). The owners of micro-farming businesses had to work as day labourers in addition to providing for themselves. Unpaid customary labour service for these farmers meant the loss of earning potential through wage labour. Gender-specific division of labour is evident in the sources: for example, men cut the vines or planted the stakes, women tied the vines or cut out the shoots. The grape harvest was carried out by both genders. In this example, women's work presupposed dexterity, while men's work required the use of tools. As the results of the study show, the manorial (*herrschaftliche*) and peasant economy could not have survived without a female workforce. Women were not limited to domestic services.

Looking at the food supply during working hours as an indicator of the labour force situation, it can be said that the labour force situation improved in two steps up to 1500. Before 1474 the quantity of grain for daily consumption was more than doubled (2.2 litres per person to approx. 5.5 litres). Expenditure on cooked food was increased in 1487. After 1500, there was a further increase in expenditure on cooked food, first for a group that could not be described in more detail and finally for everyone. These events show that the subjects gained self-confidence towards the sovereigns and began to demand better living conditions. Rippmann interprets these changes as meaning that the peasants demanded wages for their hard labour and thus made concessions to the sovereign.

In Basel, the trend is different, with wages not rising. Only in 1540/50 was the food supply increased. Nevertheless, the workers had to accept a massive loss of real wages in the sixteenth century: the price increases for foodstuffs were not compensated by wage adjustments. Natural wages were also only partially adjusted to the rise in food prices.

The pay for women was only half the man's wage. On the other hand, the wages paid in kind had not made the women worse off than the men. But with the introduction of monetary compensation and mixed wages, women were now worse off. However, it was not the women's work itself that was poorly paid, but rather the wage differentiation according to physical exertion and the degree of difficulty of the work. With declining real wages, women's work became less and less worthwhile, but due to population growth, land scarcity and rising food prices, more and more farmers were dependent on additional wage labour.

Rippmann uses serial sources for her analysis to identify developments and changes. Here, the accounts of the bishop's rule of Birseck and the accounts of the Basel hospital are of particular importance. In addition, Rippmann also uses tax lists from Basel.

The data and results collected in this way are exemplary, they can be reproduced for other regions with similar sources and can be used for comparative work.

Reviewed Sample Study 14

Guilds as a Memorial Community (JULIA BRUCH)

Schmidt, Patrick. 2009. *Wandelbare Traditionen, tradierter Wandel: zünftische Erinnerungskulturen in der Frühen Neuzeit*. Köln: Böhlau.

Methods: classification/types, comparison, discourse analysis, source interpretation/hermeneutics

Sources: accounts, artefacts, chronicles, inventories, pictorial sources, statutes, wills

Schmidt's study is interesting because of his cultural-historical view of an apparently primarily economic-historical premodern form of organisation and his expansion of the source base to include artefacts. He defines guilds as social groups and discusses their specific identity and cohesion, explicitly their inner stratification and power struggle. He analyses the relationship between guild members and the guild. The reformation's influence on liturgical *Memoria* and memory culture (*Erinnerungskultur*) is another issue addressed by Schmidt. Thus, he has chosen three cities characterised by Protestantism (Frankfurt/Main, Nuremberg and Strasbourg) and one catholic city by way of comparison (Cologne). He focuses on the seventeenth and eighteenth centuries.

Schmidt bases his comparative source analysis on the premise of memory research (Assmann [4]2002; Erll 2005): Materialisations

(*Gedächtnismedien*; like books, memorials, medallions and acts of collective memory) have to be analysed as group-focused aspects in the social sphere of their memory culture. Consequently, Schmidt interprets guilds as memory communities (20–1). Those in Cologne and Strasbourg are identified as political corporations; those in Nuremberg and Frankfurt/Main as craft guilds.

Schmidt uses diverse sources, primarily written sources and artefacts (like paintings and *Zunftaltertümer*: e.g. goblets, textiles). He divides his sources into two categories: 'media of commemoration' (*Medien der Kommemoration*) and 'documents of commemorative customs' (*Dokumente commemorativer Praxis*). 'Media of commemoration' were written (or made) to establish memory and identity, 'documents of commemorative customs' reflect on memory cultural behaviour (91–2). The vast majority of texts Schmidt uses for his research are unpublished, but an edited example text can be found from almost every group (455–6):

'Media of commemoration' are guilds' books like books of the masters, books of the sworn, books of articles, books of foundations, books of heraldry, panegyrics and chronicles. 'Documents of commemorative customs': account books, inventories, statutes and wills. Guilds' artefacts: Schmidt's book contains 20 images of such artefacts: for example, goblets, a cabinet, escutcheons, a chest, illustrations, portraits and a frontispiece.

Schmidt compares 200 years of memory culture of guilds in four cities. He pays most attention to two aspects of cultural behaviour: Firstly, he focusses on various textual and visual strategies, which ought to affect the commemoration of individual guild members. This resembles discourse analysis. Secondly, he looks at memory techniques which ought to bring about a specific concept of history. Moreover, he is interested in the concepts of order and moral which formed the base of the mentioned memory culture. For his study, Schmidt defines a new type of analysis besides the rather established communicative memory (*kommunikatives Gedächtnis*) and cultural memory (*kulturelles Gedächtnis*). He suggests the concept of pragmatic memory (*pragmatisches Gedächtnis*) for texts with a special function in preserving knowledge rather than in transportation of identity (29–33). From the countless urban sources of these four important medieval cities, Schmidt assembles an expanded sample.

Schmidt's study is particularly interesting for economic historians. By using an approach borrowed from Cultural Studies and by taking a closer look at the social group as a cultural community, Schmidt achieves a revaluation in the discussion about traditionalism and premodern guilds' capability of innovation. He emphasises that premodern guilds created their identity not only through oral rituals but also through written texts. Their members were able to use actual cultural techniques, while guilds reflected on history and traditionalism. Guild members did not give up their individuality by joining the community. Against the assumption of traditional economic history, Schmidt demonstrates that not the whole life of guild members was strictly regulated, and, likewise, contact to members of dishonourable professions (*unehrliche Berufe*) was not rigorously prohibited.

Reviewed Sample Study 15

Medical Practitioners: Negotiating Expertise in University and Medical Marketplace (EVA-MARIA CERSOVSKY)

Schütte, Jana Madlen. 2017. *Medizin im Konflikt. Fakultäten, Märkte und Experten in deutschen Universitätsstädten des 14. bis 16. Jahrhunderts*. Leiden/Boston: Brill.

Methods: comparison, modelling, source interpretation/hermeneutics

Sources: statutes, urban administrative sources

Schütte's comparative study explores the ways in which medical identities and services were negotiated in the university towns of Cologne, Leipzig and Vienna from the late fourteenth through to the sixteenth centuries. The book sheds some valuable light on the still comparatively under-researched German medical landscapes. Combining different analytical frameworks, various groups of medical practitioners and a wide range of sources, it highlights that medical markets were shaped by economic, social and cultural factors as well as by a variety of actors with comparable strategies at their disposal.

Schütte takes the challenging position of academically trained physicians as the starting point of her argument: They were compelled to prove medicine's status as a university discipline to their learned peers while at the same time competing for patients, patrons and economic gain with a diverse spectrum of other healers. She draws on Greenblatt's concept of 'self-fashioning' (Greenblatt [2]2005) as well as Rexroth's notion of expertise (Rexroth 2012) to show that providers of medicine actively constructed their identities as medical experts in order to distinguish themselves from each other as well as to prove their authority to competitors and potential patients, both within the university and the urban medical market. While she perceives academically educated physicians as the prototypical experts, the model of expertise, that is, custom-fit knowledge depending on the respective situation and the individual healer, allows her to convincingly include empirically trained practitioners in her analysis and to interpret them as medical experts in their own right.

In her interest in self-fashioning strategies, Schütte's first approach is through conflicts within the university. The 'battle of the faculties' in particular, the long-standing rivalry for rank between medicine and law, spurred the formation of a learned habitus, adopting academic clothes, participating in disputations and processions, highlighting the text-based tradition of medicine and displaying specific learned practices such as taking a pulse or performing uroscopies and anatomical dissections. Thus, physicians acquired tactics of representation and demarcation which they also utilised in competition with other practitioners. An exploration into the attempts at faculty reform in sixteenth century Leipzig in particular reveals the intersections of university and the market for medical services. In response to criticism pertaining to the neglect of duties within the university, physicians used their difficult economic situation—obtaining less financial support for teaching than other academics and having to engage in lengthy competitions for patients—as an argument to achieve stricter regulation of other healers.

Efforts to regulate the market were one of the main strategies medical faculties employed to secure their position within this pluralistic arena, Schütte demonstrates in a second step. In this part of her study in particular, she combines the concept of 'medical marketplace' (e.g. Cook 1986; Jenner and Wallis 2007) with the notion of different forms of 'capital' as defined by Bourdieu (1992). This approach helps Schütte to explain the competitive exchange of medical services not only in economic terms but also in relation to status, honour and sociopolitical relationships, which were crucial to establish the patient's trust in a healer's competence.

Learned physicians, she shows, drew on a fixed set of arguments as well as practical strategies, claiming, for example, their competitor's dangerous ignorance and litigating malpractice suits. Lacking effective sanctioning mechanisms of their own, they often appealed to civic, territorial or church authorities for help. While faculties usually tried to prohibit Jewish practitioners and itinerant or non-formally trained empirics, male and female, from practising entirely, they did not aim at exclusion but control with regard to barbers, surgeons or apothecaries. It is in this context that Schütte makes the most systematic use of her comparison and explains how local idiosyncrasies determined the length of the negotiating processes and the spectrum of agents involved. In many of these cases, the existing demand of the market proved to be more powerful than the faculties' tactics and they only gradually acquired the rights of, for example, examination and supervision.

Additionally, non-academic practitioners had social and economic capital as well as self-fashioning strategies of their own at their disposal. Schütte demonstrates that the Viennese apothecaries in particular were wealthy and well-integrated citizens who possessed strong links to the municipal authorities, thwarting the medical faculty's attempt at controlling dispensation and prices of medicines over decades. Jewish physicians, too, often succeeded in securing powerful patrons intervening on their behalf. In advice literature and *apologia*, they fashioned themselves as experts of ancient languages who were well versed in both the theory and the practice of medicine. Similarly, the self-fashioning strategies of barber-surgeons increasingly resembled those of learned physicians: They discredited the competence of their competitors and put emphasis on their superior practical expertise via surgery manuals and advertisements of medical practice, highlighting prominent patients and successful surgeries. Organised in guilds, they also relied on an institution similar to the faculty to help legitimise, restrict and ritualise access to their craft.

Throughout the book, Schütte complements her use of analytical frameworks by careful source interpretation and comparison, focussing on three cities which differed in regard to size, confession and organisation of their universities but nevertheless showed largely similar developments. A broad variety of archival as well as printed sources allows her to examine her questions from different angles and on both the level of discourse and practices. An analysis of university statutes, civic, guild and church ordinances, lampoons, medical tracts and advertisements of medical services reveals the rhetoric and norms of the time. Faculty files, visitation reports, city council minutes as well as some autobiographical material such as house books, travel journals and correspondence indicate the extent to which these norms transferred into lived reality.

The book thus invites similarly framed explorations into German cities without medical faculties. It also provides a starting point for studies which might not chose a comparative approach but focus on exploring the local cultural contexts and social networks of individual medical actors and markets in even greater depth.

Reviewed Sample Study 16

How Does a New Trade Rise? The Case of Paper Production[1] (CARLA MEYER-SCHLENKRICH/PAUL SCHWEITZER-MARTIN)

Schultz, Sandra. 2018. *Papierherstellung im deutschen Südwesten. Ein neues Gewerbe im späten Mittelalter*. Berlin: De Gruyter.

Methods: comparison, network analysis, prosopographic analysis

Sources: court records (urban), merchant's books, statutes, tax lists, urban administrative sources

This study on the spread of paper production in the German-speaking Southwest of the Holy Roman Empire examines how a new craft developed at the end of the Middle Ages, to which extent investments were required for this new industry and what risks had to be faced. Thus, Schultz analyses not only the technical aspects of paper production but

[1] This piece was written in the DFG-funded Collaborative Research Centre 933 "Material Text Cultures," sub-project A06 "The Paper Revolution in Late Medieval Europe".

also takes economic and social factors into account to elucidate the social position of the new profession of papermaking within urban society.

In its first part, the book is dedicated to the technical process of papermaking in the Middle Ages and Early Modern Period. Although described many times in its basic principles in manuals and encyclopaedias, this chapter provides new insight into the complexity of the workflow and the increasing demands on worker's skills. Schultz shows how seemingly minor aspects, for example, details in the maceration and rotting process of rags (the raw material for medieval paper), had far-reaching implications for the amount of time needed to form the sheet on the mould and subsequently influenced the quantity and quality of the production. Future research in this field will also benefit from the author's discussion of the different extrapolations of research concerning the annual production rates of premodern paper mills.

The second part of the book focuses on the emergence of medieval paper mills in the German-speaking area, placed in today's border region of Germany, Switzerland and France. Schultz creates detailed listings of staff, property and equipment belonging to these businesses, containing the mills themselves, farm buildings, gardens and fields but also tools like pounding hammers and pans for the glue. Important results of the author concern the value of paper mills that belonged to the most expensive assets in Basel. To this end, she not only collected data on purchase prices but called attention to the significance of mortgages and annuities (*Renten*) which could considerably lower the purchase prices. Schultz's research also shows that the complex ownership situations were not just granted as fiefs (*Lehen*) but could also be lease agreements (*Pachtverträge*).

Different groups were identified as initiators of paper production. Besides affluent merchants looking for promising investments, as traditionally proposed in research, papermakers too acted not merely as craftsmen but also as successful entrepreneurs. Further, printers invested in the production of paper, both to supply their own businesses and to distribute paper within their networks. Lastly, town councils and territorial lords encouraged paper production, again probably not just with regard to the needs of their administration, but as productive investment. An essential result is that paper mills usually were not initially built as such, but were often refashioned, for instance, from hammer, saw or grain mills. Also, paper mills could thus be altered into other industries, for example, due to poor profitability. Schultz shows operating periods of paper mills from centuries down to only one year.

Concerning the paper makers, the study reveals the high mobility of these craftsmen. In the studied region, a large number of Piedmontese and Northern Italian paper makers can be identified, who introduced the new craft. Within their new residences, at least the self-employed paper makers obtained citizenship. Unlike in Italy they did not form their own corporations but usually became members of already existing guilds. Noticeably often, the guilds paper makers joined were melting pots for numerous diverse professions. For example, in Basel, paper makers commonly became members of the saffron guild. Although there were no own corporations, the sources reveal a network of close relations between the papermakers within a town that become especially visible through kinship, intermarriage and mutual vouching. From the sixteenth century on, own statutes for the workers involved in the papermaking business can be found; in general, written sources on this topic multiplied substantially from this time onward.

Undoubtedly, paper history focusing on medieval Latin Europe is profoundly shaped by the scarcity and contingency of written sources. This is particularly true for insights into the medieval production process which are based on few and decontextualised documents. For basic understanding, the study depends on more recent accounts from the late sixteenth to the eighteenth centuries. These testimonies are confronted with the analysis of production traces still visible in structure and surface of the surviving papers themselves. To this end, the author collects and evaluates not only the material observations of paper research and conservation sciences on this topic but also discusses different methods of paper examination.

For the second part of the book, Schultz focuses on a case study concerning the early and dense district of paper mills in Basel. These results are compared with the sparser materials on other mills in the German-speaking Southwest. For this scope, the author had to examine an abundance of older, selective and often inconsistent studies attentive to the origin of paper production in a certain town or region. An important task both for comparing and for identifying transfer processes were prosopographic and network analyses of the paper makers.

Concerning the written sources, Basel was undoubtedly chosen for its exceptional wealth and variety of archival sources that the Swiss paper historian Kälin had already called attention to (1974). Prosopographic and other information could be gathered in city books, tax rolls, council records, court minutes and in some cases also from merchant's books or merchant's letters. While these sources are trusted friends to historians, this is not the case for the material analysis giving insight into the process of paper production. Schultz carefully discusses and connects the results and methods of conservation and material sciences with the discipline of history. It is to be hoped that her propositions for a set of tools for historians to participate in this analysis of paper as artefact will receive attention and will be enhanced.

Reviewed Sample Study 17

The Colour Blue (JULIA BRUCH)

Selzer, Stephan. 2010. *Blau: Ökonomie einer Farbe im spätmittelalterlichen Reich*. Stuttgart: Hiersemann.

Methods: descriptive statistics, source interpretation/hermeneutics

Sources: merchants' handbooks, merchants' books, sumptuary law, wills

This study was selected because of its exemplary nature for the combination of economic-historical and cultural-historical methods. The subject of this work is the colour blue. This topic allows a cultural-historical approach by asking about colour, coloured things (in the preceding study coloured textiles) and their symbolism. Since coloured things were used as a medium of differentiation in medieval society, this approach also offers socio-historical approaches. In economic-historical research tradition, Selzer also inquires into the dye that coloured textiles blue in the Middle Ages, the raw material the woad plant (*Färberwaid*). Furthermore, he asks about the producers, the production regions, the market integration of the raw material, as well as the dyed textiles and the significance for regional trade and distance trade.

The focus of the work is the practice of colour (*Farbpraxis*) as well as the materiality of the colour (13), not the colour as an abstraction. The colour is not separated from its carrier objects (*Trägerobjekte*) but is examined as bound to objects. Dyed textiles offered themselves as a field of investigation; the source of these artefacts is incomparably more abundant than that of other, also known colour carriers such as dyed horses, hair, food. The use of colour in art was explicitly excluded. The period of investigation is limited to 1300 to 1530. Around 1300, urban sources for the production and trade of the woad plant as well as for producers, producers, traders and buyers began to flow more richly. Around 1530, indigo, a new blue dye, became established.

Theoretical starting points of the work were Oexle's work on historical cultural studies, which should be interdisciplinary, and the ideas of Warburg, Simmel and the Annales School, of going from the study of the subject's parts to the whole and the theory of symbols and rituals (2–5; see further: Burke 1991; Oexle 2004; Simmel [5]2000).

Selzer treads new paths with the selection of sources by using the accounts of merchants and purchasers as well as the wills of the owners of blue textiles. Especially Hanseatic series of wills and the parallel handbooks of merchants are used. In addition, records of courtly provenance are used to examine the valuation of colour on the basis of the use of fabrics in the robe of the court (*Hofgewand*). Selzer evaluates these sources primarily by the critical historical method. As far as the surviving sources make it possible, Selzer uses descriptive statistics to examine the textile sector.

All aspects of the colour blue are examined in relation to textiles: dyestuff cultivation, dyestuff refinement, dyestuff trade and dyestuff use. This combination of aspects about the city, hinterland and courtyard mirrors in the combination of economic and technical aspects of dyestuff, dyestuff and textile trade with colour preferences of the buyers, and the sign function of blue textiles, proves to be particularly fruitful and is combined in a comprehensive consumption research of blue textiles.

The results of the study offer a number of starting points for further research. The main German growing areas for the highly sensitive woad plant were the lower Rhine and Thuringia, with a focus on Erfurt. Here, special crops with tendencies towards proto-industrialisation emerged. The cultivation areas along the lower Rhine were producing for the textile centres Cologne and Aachen, but also for western European textile centres. The Thuringian cultivation area was the more important of the two; here the regional trade was organised directly via Erfurt (e.g. to Chemnitz and Zwickau), the long-distance trade via the waterways via Frankfurt/Main, Görlitz and Nuremberg. The region around Erfurt clearly shows how the division of labour worked in a monoculture. The actors are farmers, dyers, cloth makers, guilds and publishers. The relationship between the city and the surrounding countryside was also based on the division of labour: the plant was cultivated in the countryside, and the processing took place in the city of Erfurt in *Waidhäusern*. The testaments from the North German region, evaluated in series, show that the meaningful colours have been replaced by the colour black in textiles as a means of distinction. The farm robe and the colour of the same helped to structure both community and hierarchical relations.

Selzer investigates the entire textile sector, that is, textile production and textile trade. This sector is known to be one of the most important and powerful sectors of the entire medieval economy. In addition, he considers the consumers. Thus, the results of this study are applicable to many questions of medieval economic history. The work is also exemplary in its interdisciplinary approach. In addition to results relevant to economic history, it offers results for social history, political history and the history of ideas. The study also proved to be trend-setting for the history of consumption and for studies on historical materiality.

Reviewed Sample Study 18

Social Topography of Towns in Late Medieval Northern Germany (ULF CHRISTIAN EWERT)

Steenweg, Helge. 1994. *Göttingen um 1400. Sozialstruktur und Sozialtopographie einer mittelalterlichen Stadt*. Bielefeld: Verlag für Regionalgeschichte.

Fehse, Monika. 2005. *Dortmund um 1400. Hausbesitz, Wohnverhältnisse und Arbeitsstätten in der spätmittelalterlichen Stadt*. Bielefeld: Verlag für Regionalgeschichte.

Igel, Karsten. 2010. *Zwischen Bürgerhaus und Frauenhaus. Stadtgestalt, Grundbesitz und Sozialstruktur im spätmittelalterlichen Greifswald*. Köln: Böhlau.

Methods: comparison, descriptive statistics, mapping (see digital mapping)

Sources: tax lists, town books, urban accounts

Social topography can be defined as the distribution of population (or a part of it) across urban space according to socio-economic variables like personal wealth, profession, office holding or gender. Thus, for reconstruction of the social topography of a given town, historians would have to collect information and gather data on various aspects of the social status of all town inhabitants or a selected group of inhabitants. In a second step, the socio-economic data then is displayed geographically in order to accentuate the spatial dimension of social stratification.

For the towns of Göttingen (Steenweg 1994), Dortmund (Fehse 2005) and Greifswald (Igel 2010), in-depth studies were done, aiming at the analysis of certain elements of the town's social topography in late fourteenth and early fifteenth centuries respectively. Because the orientation towards the concept of social topography is common to all three studies, it makes perfect sense to present the results in one single case study, even though the actual focus slightly differs, and even though the sources that were able to be used in the three studies are not quite the same. However, one of the most important prerequisites for a meaningful comparison is fulfilled as well, inasmuch as Göttingen, Dortmund and Greifswald are North German towns and on top of it all were members (in a broader sense) of the Hanseatic League.

The most important sources on which a reconstruction of medieval urban social topography is typically based are tax lists. Such tax lists survive for Göttingen and Dortmund. For both towns it is also possible to rely on two separate lists: an earlier list for the late fourteenth century and a later list for the early fifteenth century, respectively. For Greifswald the surviving town books provide information on the ownership of real estate and houses.

The studies of Fehse on Dortmund and Igel on Greifswald both vividly show how deeply in late medieval towns of Northern Germany the socio-economic status of inhabitants corresponded to the geography of ownership and living places within the town. In Dortmund, the houses with highest value were situated around the marketplace, nearby town church and along two main streets, which divided the town into quarters. Fehse also found out that a significant amount of house owners were not living in their own houses, but in houses they had rented.

In the case of Greifswald, the dwelling places of the members of the town's leading class also can be established on the basis of the surviving administrative records. On the resulting map of dwelling places for Greifswald, it can easily be seen that town councillors and mayors lived exclusively in the eastern parts of the town. They mostly resided at the marketplace and in Knopfstraße, which was a street connecting the marketplace to the neighbouring area. In contrast, the western areas of the town had a completely different social character because their craftsmen dominated the neighbourhood. In addition, it can also be seen that if someone advanced within the town's social hierarchy because of his/her economic success he/she usually moved from the west side to the more reputable east side of Greifswald. Thus, social networks of the Hanseatic leading families were not exclusively based on social nearness but also on spatial vicinity within the town. This is different from Italian towns at the time, which were very often divided into separate neighbourhoods, each dominated by a powerful family of the town's ruling class. Greifswald's relatively small population of approximately 5000 inhabitants (by 1400) makes such a pronounced spatial and social segregation all the more astonishing.

In the case of Göttingen, it becomes clear that the spatial segregation of working places historians typically assume to be characteristic for medieval towns is not a fiction. Steenweg provides us with empirical evidence for this segregation when he concentrates on the analysis of the distribution of crafts and craft shops within the town. Bakers were located at many places in the town, and their spatial distribution looks quite even, presumably because they mostly had to produce in the vicinity of their customers due to marketing reasons. However, the water-consuming and smell-producing crafts like butchers, tanners or dyers can in Göttingen also be found at the periphery of the town, but the owners often lived away from their craft shop, a glimpse of an already existing separation of working places and dwelling places.

Reviewed Sample Study 19

Collective Action in Premodern Agricultural Production (ULF CHRISTIAN EWERT)

Volckart, Oliver. 2004a. Village Communities as Cartels: Problems of Collective Action and Their Solution in Medieval and Early Modern Central Europe. In *The Institutional Analysis of History*, ed. Oliver Volckart, 21–39. München: Accedo Verlagsgesellschaft.

Volckart, Oliver. 2004b. Die Dorfgemeinde als Kartell: Kooperationsprobleme und ihre Lösungen im Mittelalter und in der frühen Neuzeit. *Jahrbuch für Wirtschaftsgeschichte* 45 (2): 189–203.

Methods: classification/types, game theory, institutional analysis

Sources: village by-laws

This reviewed sample study deals with the management of arable land and the commons in premodern agricultural production and the problem of collective action related to it. Volckart analyses the problem of collective action with regard to the production strategy of German peasants during the Late Middle Ages and the early modern period. His analysis of peasant cooperation within villages is based on numerous surviving village by-laws of the fifteenth and sixteenth centuries—regulations prescribing various aspects of both the agricultural production in the village and the marketing of the produce in the nearby town—and he resorts to game theory.

In premodern Germany, farmers of a village commonly worked together to optimise their agricultural output for sale on urban markets. They thus were maximising utility, both with respect to their individual profit and to the benefit of their community. This finding is in contradiction to the widespread belief that market orientation and a capitalist behaviour were issues not known to premodern peasants, and that instead their behaviour in general was marked by subsistence constraints and the legacy of traditions and customs.

Even though observing the farmers cooperating for the purpose of maximising community profits clearly shows that village communities not only produced for subsistence, neither the peasants' cooperation itself nor the actual way in which they worked together is straightforward. To shed more light on this problem, Volckart discusses the following questions in his study: (a) Which types of peasants' cooperation are observed? Which functions did they have for the individual? And why was cooperation under such conditions very difficult to achieve? (b) Which institutions were created to enhance cooperation? (c) Who was responsible for providing such institutions and possibly sanctioning their disregard?

The village community was the overarching form of organisation in which peasants were able to join forces. However, for each individual, being a member of a village community meant to be subject to behavioural rules, rights and obligations. A significant part of such rights and obligations was summarised under the name of *Flurzwang* (village by-laws). In general, a number of activities in agriculture were determined by the *Flurzwang* such as the location of production, the type, quality and quantity of the agricultural produce, the use of work equipment, and occasionally also the sales price within the village. The village by-laws of course were also important for managing the common lands of a village, but many of its regulations pointed to the arable land which lay in the proper hands of individual peasants. In this latter respect, the by-laws thus limited or even prevented competition of peasants within the same village.

The profit-seeking cooperation of peasants is interpreted as a cartel whose purpose was to increase sales opportunities on the one hand and to avoid internal dispute on the other. Through village by-laws not only legal certainty within the rural community was guaranteed. Through coordination of agricultural production also market power of the village was generated, out of which the cartel (of farmers) as supplier of the urban market could make use of for the benefit of its members. Forming a cartel allowed farmers to earn a monopoly rent. A monopoly rent is the additional profit that could be gained on the market in comparison to a situation in which peasants would have been in competition with each other, in the production as well as in the marketing of agricultural goods.

If the village community had a cartel function for peasants, why does this require any detailed explanation at all? After all, the farmers should have had a strong interest in both the formation and maintenance of such a cartel because of the economic benefits it provided them with. So why did the peasant cartel have to be institutionalised? Volckart's game-theoretical analysis shows that the interest of peasants in working together with each other is a necessary but non-sufficient condition for effective cooperation.

The most important issue here is the fact that cooperation always was costly. Neither the formation nor the maintenance of a cartel could be obtained for free. Since the economic benefits of a peasant cartel do have the nature of a public good, no one can be excluded from enjoying these benefits, and there are strong incentives for (potential) cartel members to save these costs and to take the provided services for free. This behaviour is called free-riding, and there would have been no possibility to exclude 'free-riders' who were not respecting agreements from enjoying the benefits that came from acting as a group. This is why in general the formation of a cartel is very unlikely. And if a cartel has been formed, it tends to be notoriously unstable, which can be proved within the well-known n-players 'prisoners' dilemma' game. So, the village by-laws were used for the management of the commons, but they were also a means of formalising the peasant cartel from a merely informal state through the establishment of binding rules. Thus, the *Flurzwang* was deployed as a third-party enforcement to enhance cooperation of peasants and to punish those who did not respect regulations and mutual agreements. Privileged access to community resources like the laundry or the bakery, granting of credit and the reimbursement of court fees were common as rewards for cooperative behaviour. Negative sanctions instead were all kinds of fines. However, with the number of members rising, each member might also think that his personal contribution to the cartel was more or less dispensable—the cartel would work effectively even without his participation—and might want to defect. Volckart plausibly suggests that because of the population growth in the High Middle Ages, the growing village communities were simply forced to formalise the cooperation of their inhabitants.

Positive enhancements as well as negative sanctions, however, are again causing a cooperation problem which is called the "second-order problem of cooperation". Who should be responsible to punish defection? Who is willing to bear the costs of reward and punishment? In this respect, ‘free-riding’ by members can be the dominant strategy, too, because even though all of them like to see non-cooperative members being fined, probably no one wants to voluntarily take responsibility of such punishment. As a result, the village community was necessary as a higher level of sanctioning authority, and the recognition of collective rules had a benefit for every peasant. However, Volckart suggests that the usually unequal distribution of wealth within a community meant that rich farmers might have had a greater interest in maintaining the cartel than small farmers and therefore might have been more willing to pay for the necessary maintenance costs, which in turn made the peasant cartel stable.

Volckart’s study on the village by-laws in premodern Germany is a valuable contribution to the long-standing international debate in economic history on the formative role institutions played in production, development and growth. On the grounds of careful economic reasoning, he shows that the institution of the *Flurzwang* was needed not only to manage the commons in premodern villages but also to enhance and control economic cooperation of peasants to the benefit of the whole community. By making fruitful use of some well-known findings in game theory concerning the provision of public goods, Volckart is also able to explain, without making the rather naïve behavioural assumption of an either intrinsic or even altruistic motivation of peasants, why they were committing themselves to cooperation. The rather balanced incentive structure of (positive) enforcements and (negative) sanctions was powerful enough to guarantee cooperation. Moreover, by clearly distinguishing the first-order problem and the second-order problem of cooperation, Volckart is able to show that the maintenance of cooperation-enhancing institutions usually is a serious problem as well.

However, in one regard Volckart’s argument is rather weak and lacks plausibility. In the village by-laws nothing is said about cooperation of peasants originating from different villages. This seems nevertheless to be a crucial point. Only if all the villages surrounding a town had coordinated their supplies to the urban market, village communities as suppliers would have been able to exact some sort of real market power—to their own benefit, of course, but to the detriment of consumers, too.

In reality, peasants of a village might have coordinated their efforts in agricultural production and in marketing inside their own community, but on the nearby urban market they actually were in contention with farmers from neighbouring villages, which in turn should have led to an immediate dissolution of their marketing cartel. It seems, though, as if some of the historical environmental conditions did not enhance the stability of peasant cartels. Nonetheless, the mechanism of cartel formation and maintenance described by Volckart could of course be used as a theoretically sound and plausible explanation of production and marketing strategies of urban craft guilds.

Reviewed Sample Study 20

Weaving Looms and Weaving Workshops (JULIA BRUCH)

Windler, Renata. 2008. Mittelalterliche Webstühle und Weberwerkstätten—Archäologische Befunde und Funde. In *Archäologie und mittelalterliches Handwerk—Eine Standortbestimmung*, ed. Walter Melzer, 201–216. Soest: Westfälische Verlagsbuchhandlung Mocker & Jahn.

Methods: archaeological methods

Sources: archaeological sources

Textile production has occupied an outstanding position in some regions of Europe since the thirteenth and fourteenth centuries at the latest, for example, wool production in Flanders or silk and cotton weaving in Italy, canvas and fustian (*Barchent*) production in the Lake Constance region and upper Swabia. Textiles are always produced in rural households alongside manual and partly proto-industrial production. However, historical research rarely deals with rural production and archaeological research with textile production. Textiles can be poorly detected archaeologically, both the products themselves and the equipment for production. However, individual parts are already made of less transient material—such as clay, lead, metal or glass—and can thus be better detected (spinning vertebrae, weaving weights, sewing needles, smoothing stones). Looms can be archaeologically proven.

The study is particularly interesting because Windler uses archaeological methods to evaluate archaeological sources to clarify the question of when and where footstool looms arose. The study can be connected to following economic history studies because it comes to the astonishing result that this new technology was certainly already in use in the ninth and tenth centuries, perhaps even since the seventh/eighth century north of the Alps in rural areas. One must assume that the horizontal loom and the vertical loom, which works with weights, had existed parallel to each other for a long time. In 1990, a weaving workshop with a weaving loom from the fourteenth century was identified in Winterthur during excavations, which was characterised as a feature, which affects the following (*Schlüsselbefund*) and on the basis of the features *(Befund)* made there, further weaving cellars with weaving looms could be identified. The meta-study presented here brings these individual features together as a synthesis, combined with the examination of preserved textiles that are assigned to a certain type of loom and the evaluation of an excavation in Otelfingen (Canton Zurich, Switzerland).

Important for further studies in economic history is the result that the new technology found its way into rural regions so early on, which have so far not been classified as premodern innovation centres. It cannot be read as appealing to rural areas, especially when it comes to textile production.

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7

Reviewed Sample Studies on Markets

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In total 68 reviewed sample studies provide an insight into how economic history was, is and can be done in practice. The reviewed sample studies contribute to the research questions outlined in Chaps. 2, 3, 4 and 5. They do so by focusing on the economy of the Holy Roman Empire. They thus lay the foundation to combine the current debates in premodern economic history with the diverse and thorough research studies on the Holy Roman Empire.

At the beginning of each reviewed sample study, we highlight the methods and sources employed in the respective work. Different methods and sources are arranged in alphabetical order. Readers who want to learn more about the method or source can look them up in the glossaries (Chaps. 9 and 10). The reviewed sample studies give concrete examples as to how and to what end the methods and sources are applied. Each entry starts with naming the reason why we picked this particular reviewed sample study: Is it an example of a quite typical analysis or does it employ an innovative methodological approach? Does it analyse one of the most prominent sources of economic history or does it make new sources accessible? Does it form part of a fierce debate or is it a study many researchers rely on? Each entry then sketches the main results of the study, and describes the methods which the study employs and the sources it exploits. The entry concludes with some ideas about how the findings, methods or sources can be inspirational for further research.

The reviewed sample studies are grouped into the three main areas which structure this book, namely production, market, and money and credit. Some studies do not clearly belong to one area only, but each study has been assigned to production, market, or money and credit for the sake of clarity.

Reviewed Sample Study 21

Measuring the Material Standards of Living (KATHRIN PINDL)

Allen, Robert C. 2001. The Great Divergence in European Wages and Prices from the Middle Ages to the First World War. *Explorations in Economic History* 38: 411–447.

Methods: basket of goods, comparison, descriptive statistics
Sources: databases, urban accounts

One of the most prominent questions in economic history is: How and when did Europeans escape from the so-called poverty trap? When and why did certain regions overcome Malthusian dynamics of recurrent misery? To answer these questions, one must be able to measure the material standard of living of different social groups in a historical perspective and detect crises and strategies of subsistence. The meeting of supply and demand concerning the provision of food was a pivotal economic task for premodern economies, both at the individual agent-centred level and at the societal level (Abel 1978; Allen 2001; Malanima 2009; Persson 2010). One of the most seminal papers, concerning its results as well as its impact on methodologies, is Allen's article.

Explanations for the divergence of wages and prices between European regions have concentrated on data sets from the vanguard regions of industrialisation (Munro 1991; De Vries and van der Woude 1997). In contrast, Allen assembles data for in total 19 European regions, mostly from bigger cities with local markets. He shows that the economic development in the Late Middle Ages did not correspond to the later patterns of industrialisation. He mostly uses books of account from middle- or larger-sized cities. The common narrative has always had difficulties in accommodating the fact that there were many more or less wealthy middle-sized cities such as Strasbourg, Augsburg, Regensburg and Nuremberg which lay in a region that is supposed to have remained poor. Does it seem probable that these cities grew while their hinterland remained in poverty, just one or two bad harvests away from the subsistence level? A close analysis of the standard of living in 19 European cities reveals that incomes remained more or less constant only in the Netherlands and England, whereas in central Europe, for example in Augsburg, Leipzig, Munich or Gdansk, real wages all but collapsed. Central European standards of living remained very low until the twentieth century.

Allen works on the basis of a large database (the sheets are available online) on prices, wages and diet plans. He statistically analyses long series of wages and prices for specific professions and goods from all over Europe and constructs a so-called poverty-line consumption via subsistence baskets of goods. The crucial step is to construct a real wage index: it helps to get a grip on the purchasing power or the material standard of living, and also on issues of (in-)equality between different social groups. The nominal wages need to be adjusted to some sort of consumer price index which reflects the changing values attributed to a representative bundle of goods and services for group-specific patterns of consumption. It is important to take into account questions of average height, weight and nutrient consumption in late medieval and early modern times, bearing in mind seasonal consumption, working hours and many more aspects, amongst which there are difficult parameters like the formation of expectation, tastes and trends. Real wage indices bring together matters of livelihood and vulnerability towards crises. Allen can thus observe the socio-economic capacities and vulnerabilities of different groups, for example, skill-premia between day-labourers and craftsmen.

One of the most urgent methodological problems is the comparability over time and space. The nominal currency measures we find in the sources need to be adjusted for effects of inflation or, more broadly speaking, for changes in monetary values over time. For the sake of transregional and transtemporal comparisons it seems pragmatic to convert local historical units of measurement, weight and currency into the common metric system and, as has been conventional in some previous studies, grams of fine silver. One of the most urgent methodological problems is therefore the conversion of historical currencies and measures and the reflection of attributed values. One issue that is very often overlooked by economic historians is the fact that the wages and prices in the historical books of account are expressed in fiat money, so it is almost impossible to infer directly the actual means of payment, that is, the exact amount of silver or gold paid. Furthermore, and this is particularly relevant for the (Southern) German lands before the nineteenth century, it is difficult to convert the regional means of payment into a comparable unit (Fig. 7.1).

The database of this seminal paper has been reviewed critically. Some of its series seem to run too smoothly, given that market integration was very low and increased only slowly (Volckart and Wolf 2006). Either the reported prices were not actual market prices, but

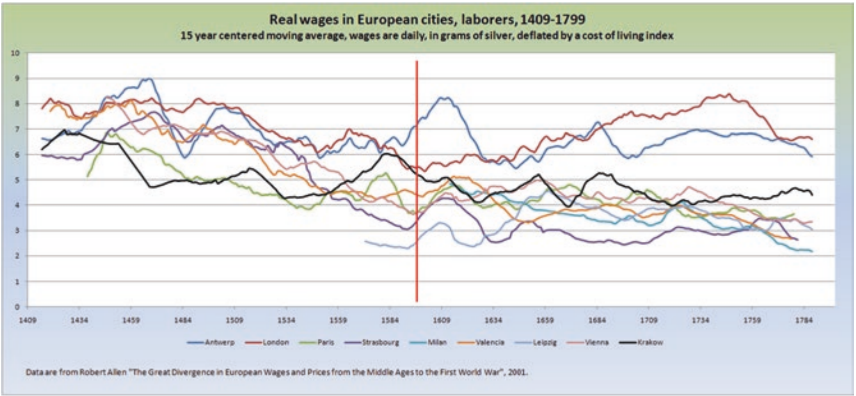

Fig. 7.1 Real wage development in European cities according to Allen 2001 (Attribution: CC BY-SA 3.0, source: https://creativecommons.org/licenses/by-sa/3.0), via Wikimedia Commons

determined by local authorities, or they have been interpolated to bridge gaps in the raw data. Nevertheless, Allen's study serves as a benchmark for the construction of flexible, representative baskets of goods which should include basic foods, textiles, housing and energy amongst other items for a specific place, time and social group. Allen's basket of goods and the number of calories he assumes for his so-called poverty-line consumption have been critically discussed in recent decades: Jane Humphries, for example, has argued that people who do physical work need more calories in order to survive. Other impulses, especially on the composition of the basket of goods, came from Muldrew's study (Muldrew 2011). And we should not forget the pioneering study published by Saalfeld as early as 1970, which has remained largely unnoticed in the recent international debate (Saalfeld 1970).

On a more general level, the construction of real wage series might give clues as to how far modern economic concepts might be implemented in a premodern setting. It is necessary to discuss which factors deviate and whether they were time-specific, as without a doubt "[wages and prices] bear on such fundamental issues as the pace of economic development [...] and the standard of living".

Reviewed Sample Study 22

Sporting Goods Retailer (SIMON LIENING)

Behringer, Wolfgang. 2008. Fugger als Sportartikelhändler. Auf dem Weg zu einer Sportgeschichte der Frühen Neuzeit. In *Faszinierende Frühneuzeit. Reich, Frieden, Kultur und Kommunikation 1500–1800*, eds. Wolfgang E.J. Weber and Regina Dauser, 115–134. Berlin: Akademie Verlag.

Methods: source interpretation/hermeneutics

Sources: merchants' letters

This study deals with the topic of sport and its social relevance in early modern Europe. By scrutinising merchant letters, Behringer detects a commodity which has escaped the notice of economic historians so far: sporting goods. The author emphasises a connection between sport and the economy by concentrating on the sporting goods trade of the banker and merchant Hans Fugger in Augsburg in the sixteenth century. His source interpretation of the correspondence between Hans Fugger and the Dukes of Bavaria clearly shows that ball games—especially tennis—played an important role in courtly culture in premodern Bavaria. He investigates the trade of tennis balls and rackets by Hans Fugger, who ordered numerous balls and rackets in Antwerp for the Dukes in the 1570s. In about a year, Fugger procured around 11,000 balls and 50 tennis rackets.

Behringer demonstrates the economic relevance of sports in premodern Europe, which can be seen in the existing demand for sporting goods at that time. In addition, he illustrates the existing trading opportunities within Europe. He shows that the enormous number of sporting goods on the market opens up new perspectives. If we assume a significant market for these articles in the past, it would be interesting to learn more about similar contexts and sources that will be relevant to other possible contributions in the field of sport and business. These and other aspects could be the starting point for future studies on economics and sport in the premodern era, as Jaser (2016) has recently pointed out in an article on tennis in fifteenth- and sixteenth-century Paris, in which he also addresses economic aspects (e.g. commercial tennis courts and sale and production of equipment).

The article by Behringer thus presents a new topic for economic history, a topic where research interests in material culture, social relations, rituals, business organisation and trading connections can converge.

Reviewed Sample Study 23

The City and the Fair: Urban Revenues, Business Cycles and the Organisation of Trading at the Fairs of Basel (ULLA KYPTA)

Benkert, Davina. 2015. Messbücher und Messrechnungen. Zur Geschichte der Basler Messen bis 1647. In *Wiegen – Zählen – Registrieren. Handelsgeschichtliche Massenquellen und die Erforschung mitteleuropäischer Märkte (13.-18. Jahrhundert)*, eds. Peter Rauscher and Andrea Serles, 69–90. Innsbruck: Studien Verlag.

Methods: descriptive statistics, institutional analysis, source interpretation/hermeneutics

Sources: chronicles, urban accounts

The fair of Basel did not count amongst the large and famous fairs which served as focal points for the pan-European trade, like, for example, Frankfurt/Main or Antwerp. The Basel fair is a typical example of the hundreds of medium-sized, medium-important fairs which together kept the European trade going. Like many other markets and fairs, Basel helped to connect Northern Europe to the Mediterranean: for example, the trade route from Antwerp to Milan and Lyon crossed Basel. Benkert's study shows how a colourful (even though not complete) picture of such a fair can be gained from studying urban accounts. However, she also makes it clear that the quantitative analysis of accounts in many cases needs a qualitative complement to explain the variations in revenues and expenses. This qualitative complement can luckily be found in Basel, since a number of sources from the urban administration survived, as well as the biography of a cloth trader, Andreas Ryff.

Benkert studies the urban accounts from Basel in order to identify business cycles of the fairs. She works out the ups and downs of revenues that the city of Basel could collect during the fair, and then goes on to explain these ups and downs by studying further sources, such as minutes of town meetings or biographical sources. The revenues gained by the fairs started out on a high level right after the first fair was held in 1471. In 1494, the number of fairs per year was reduced from two to one: local craftsmen had pressured the town government to abolish the fair at Pentecost since they feared the international competition. Apart from a sharp plunge in 1563/1564, which can be explained by the Black Death coming to Basel, revenues show a slow but steady rise. The Basel fair lost importance during the seventeenth century but is still celebrated as a local event today.

But Benkert does not only sketch out business cycles, she also gives a colourful account of the institutional set-up of one of the typical fairs of European trade. She can tell which commodities were traded, where they were stored and sold, which dues were to be paid where, etc. Household items, cloth, gold and silver items, gloves, hats and belts brought the highest revenues for the municipal coffers. There were more retail sellers of cloth than wholesale traders. The Basel fair clearly served as a market where goods were not exchanged between international merchants but were distributed to consumers throughout the region. The town of Basel provided them not only with places to sell their goods but also with the correct *Elle*, a measure for cloth, and with soup.

To identify the business cycles of the fair, Benkert uses descriptive statistics. She makes it clear that the data provided from the urban accounts tells only part of the story: it only covers the urban expenses and revenues. To get a full picture of the business cycles, one would need data on visitors to the fairs, prices, commodities, speculative trading, sales developments and credit transactions (Denzel 2004). Benkert draws graphs of the urban revenues and then identifies ups and downs which are large enough to call for an explanation. To find this explanation, she has to turn to other, complementary sources. For example, the graph shows a sharp slump in 1563/1564. The biography of Andreas Ryff, a cloth trader, gives the explanation: Basel was hit by the Plague in this year. Urban documentation shows that in 1592, the city of Basel paid 200,000 gulden to the bishop and 50,000 gulden to the cathedral chapter to secure privileges and lordly rights in the surroundings of the town. This can explain the jump in revenues from the fair in this year: The town increased one of the customs to gain enough revenues to pay the bishop. Benkert in sum combines quantitative and qualitative interpretations to first identify the points in time when something interesting must have happened in Basel, and then to explain what happened then.

The data on business cycles of the fair was collected from the annual accounts of the city of Basel, the urban accounts. They list the revenues the town gained from the fairs. The accounts comprise different customs and dues which mirror a part of the institutional framework of the fair. Merchants had to pay a sum to store their goods in the *Kaufhaus* (store house), to employ a broker or someone to cut their cloth correctly; they had to pay special dues on cheese, chalk and butter and other dues on, among other things, cattle, iron, steel and honey. The urban accounts also include the accounts of merchants who rented a space to sell their goods (*Stellgeldeinnahmen*). These accounts tell us who rented a stall, which goods were sold and how many merchants dealt in these goods, and thus allow Benkert to characterise the main function of the fair as the distribution of goods throughout the region.

Benkert's study puts into practice Denzel's framework of how to analyse business cycles (Denzel 2004). In Basel, the surviving sources show us only a partial picture of the business cycles. In other towns, however, it might be possible to gather even more information. A larger number of studies on business cycles of different fairs could help to gain insights into European-wide business cycles. Furthermore, studies on fairs provide us with a very lively account of how business was done in practice.

Reviewed Sample Study 24

Matching Supply and Demand in Premodern Cities (ULLA KYPTA)

Börner, Lars, and Daniel Quint. 2010. *Medieval Matching Markets*. Freie Universität Berlin School of Business and Economics Discussion Paper Economics 2010/31.

Methods: classification/types, hypothesis testing, institutional analysis, modelling, regression analysis

Sources: databases, statutes

Brokers and intermediaries kept premodern market activities going. As soon as a market grew large enough to attract merchants from outside the city walls, sellers needed someone to point out possible buyers for their goods and inform them about the price they might expect to get. Brokers and intermediaries are well-studied subjects in market micro-structure theory, but how the system worked in practice has received far less attention except for the occasional case study such as Greve 2011. But since brokers normally ranked among the urban personnel, a large number of urban regulations survived which governed the brokers' trade. Börner and Quint study more than a thousand of them to get a comprehensive overview of different types of brokerage systems. Their study combines the unearthing of a huge treasure of data with the design of a model for different forms of brokerage. It thus shows how qualitative data such as brokerage rules can be analysed with mathematical models.

Börner and Quint argue that brokerage was installed by the urban government as an efficient matchmaking institution, that is: by matching supply and demand, brokers enhanced the overall welfare of trade. They discern six different types of brokerage rules (11f.). Most towns implemented a system where only a few licenced brokers were allowed to work and who did not have the right to conduct private transactions. Merchants were free to use the matching service or to transact on their own. If they called on a broker, they had to pay a fixed fee, either a fixed fee per unit or a fixed percentage of the price. A general distinction can be drawn between seller-friendly and buyer-friendly mechanisms. When the former was in place, the broker gave the surplus to the seller. With the latter, the broker could decide how he wanted to split the surplus between buyer and seller. Börner and Quint show that the implementation of buyer- versus seller-friendly mechanisms depended on the product: seller-friendly rules were introduced for products with heterogeneous tastes, such as textiles and horses. Brokerage could especially enhance the welfare in those transactions, since the seller did not know the preferences of the buyers and was thus at a loss to find buyers and the appropriate price. A buyer-friendly mechanism (or even no brokerage rule at all) can be found for homogeneous goods such as foodstuffs. Towns therefore played an active role in shaping trade, and Börner and Quint conclude that formal, public institutions should not be underestimated when discussing premodern economic growth.

Börner and Quint proceed with different methodological approaches. First, they use classification to build six types of brokerage statutes. They discern the different elements that a brokerage rule included, for example: Was the broker prohibited from conducting private business? Were merchants required to use a broker or were they free to decide? The six types represent the six most common combinations of these elements. Second, Börner and Quint build a model to perform an institutional analysis. The model helps them identify the incentives for brokers as well as for merchants. They model how the different sets of rules affect the welfare of market participants. With the help of the model, Börner and Quint can put forward several hypotheses, for example: seller-friendly mechanisms should be in place for heterogeneous products. These hypotheses are tested in the next step; in other words, the theoretical model makes it possible to propose hypotheses, and the large data set makes it possible to check whether they are right or not. Börner and Quint now employ a binary logit regression. The dependent variable is the matchmaking design: Is it seller- or buyer-friendly? The product which was sold serves as an explanatory variable (among others). They control for time, geography and city size. The results of the regression analysis confirm the hypothesis that seller-friendly brokerage rules were in place for heterogeneous goods such as textiles, and buyer-friendly rules for homogeneous goods such as foodstuffs. The time variable shows that seller-friendly regulations increased over time. Geographically, matchmaking was more common in the North of the Holy Roman Empire, but interestingly not in the commercially advanced cities of the Netherlands. The combination of different methods in sums serves to give a structured overview of the different types of brokerage rules in place, helps to understand the working of brokerage, and offers explanations as to why cities chose which type of brokerage rule.

Börner and Quint compiled a database of 1,106 sets of regulations from 42 towns from the Holy Roman Empire, including the most important merchant cities such as Amsterdam, Antwerp, Augsburg, Bruges, Cologne, Danzig, Frankfurt/Main, Hamburg, Leipzig and Strasburg. The data set comprises almost all available brokerage rules from the late thirteenth to the seventeenth century. The authors included all edited brokerage regulations as well as complementary archival material mentioned in the edited sources and in the secondary literature.

Since current research considers urban regulations to be highly important for the workings of the premodern economy, similar studies for other regulations than matchmaking would enhance our understanding of the urban economy, as Börner and Quint themselves point out (38). Furthermore, it would be interesting to know how the institution of brokerage was connected to other urban institutions, and how all of them changed over time.

Reviewed Sample Study 25

The Hanseatic Bergen Trade in the Late Middle Ages. Trade, Merchants, Networks (BENJAMIN HITZ)

Burkhardt, Mike. 2009. *Der hansische Bergenhandel im Spätmittelalter. Handel, Kaufleute, Netzwerke*. Weimar: Böhlau.

Methods: microhistory, network analysis, prosopographic analysis

Sources: urban administrative sources

The Hanseatic League is excellently suited for network analysis due to its functioning: it was no structured organisation and formed no fixed hierarchies, but worked as a "network stretching across wide areas" (Poeck 2010, 511). Hanse merchants formed dense networks based on a variety of economic and social relationships in order to increase their access to information, which allowed them to keep control over their business. Jahnke calls this a "system of controlled public" (Jahnke 2010, 199). Burkardt applies network analysis to one segment of Hanse traders, the so-called *Bergenfahrer* who did business in the Norwegian town of Bergen: they mainly exported grains and imported stockfish. His focus is not on networks of individuals but on the structure of the whole network of relationships.

Burkhardt draws up three networks based on three samples: the first from 1360 to 1400, the second from 1440 to 1470, and the third from 1490 to 1510. In all three samples combined, the author identifies 993 merchants who participated in the Bergen trade. This aspect of prosopography is an important part of the analysis but is not discussed here. A merchant is considered part of the network only if he had at least two identifiable relationships with other merchants. The position in the network is not defined by hierarchical structures but only by the access to resources and the quantity and quality of connections that the network granted. The reader can tell that Burkhardt is very careful not to see networks where there actually were none. For his study, Burkhardt coded economic as well as social relationships, for instance, participation in companies, credit relations, family relations, the role as will executors (the last give quite dense and large networks), but not memberships (of brotherhoods, etc.). On the technical side, he used UCInet for data collection and network calculations, and NetDraw for the visual representations.

The author admits several difficulties. First, he insists that it is virtually impossible to know all personal connections of a single merchant, since the sources are limited to what he calls “official contacts” (183). So the network density is always underestimated, but still very high, which goes to show the extent to which Hanseatic merchants were embedded in a network of social and economic relationships. Second, the resulting network visualisations are so huge and complex that the author finds it difficult to gain an overview of them (317). Third, the analysis cannot take into account the temporal changes in the network over such a long time (40 years in the first sample).

The author’s response to the complexity of the networks consists in what he calls a “Macro-Meso-Micro-Analysis” (393). Since the analysis of individual networks (ego-networks) alone is as unyielding as the attempts to analyse the network as a whole, he uses a combination of “detailed and comprehensive analysis” (344) that allows for the understanding of network structures. At a macro-level, Burkhardt observes that each network had at its periphery people whose access to resources depended on one single broker. The core of the networks, analysed at a meso-level, is more yielding: in each sample, he can identify a group of five or six merchants widely connected—not least among themselves. The relationships in this heart of the network turn out to have been mainly political. This structure of a core of traders, each surrounded by a group of traders not so well connected, who depended on them, is more clearly visible in the second and third samples. This indicates the dominance of a small group of very rich merchants. The first and the last sample show the dominance of one single actor, which can be analysed at a micro-level.

The study observes changes in the network structures, for example when looking at the network of participation in companies. The first sample shows the importance of kinship—a factor that is no longer of importance in the other samples. The author traces this back to a higher degree of institutionalisation and increased contacts between merchants that might have created other forms of (social) safeguards. This observation is confirmed by the fact that in the last sample, the connections not linked to companies were much denser than in earlier periods. Burkhardt concludes that the relationships between companies were chains of clusters (several strongly connected traders, loosely connected through one person) rather than networks. These results also stress the importance of looking at different types of relationships separately. Incidentally, looking at network structures which imply some kind of collaborative spirit should not lead to overseeing the clear signs of a fierce competition.

The Bergen traders were not so marginal among the merchants of Lübeck as the older research literature tended to state. The decline in the trade in the late fifteenth century may have lowered their prestige and influence, but before, they were a solid part of the town's elite. More precisely, they formed a substantial part of the social and economic networks of Lübeck's elite. This observation is in line with the findings of the role of Bergen traders as buyers and owners of real estate in Lübeck and the role as lenders, both growing in importance (and in credit sums) over time. The role as lender is seen as proof of the economic prosperity of the Bergen trade.

The study is based mainly on the archives of the Bergen traders in Lübeck and some other series of Lübeck's city archives. Bergen itself holds no records due to a town fire, and searches in English and Dutch sources yielded few results, so it was not possible to establish whether network connections existed between foreign traders and the Hanseatic networks (although some examples the author cites show that such contacts did exist).

All in all, this study shows that network analysis can be done for premodern times and does not have to stop at employing the term in a metaphorical sense. With a circumspect definition and an in-depth analysis such as

Burkhardt's, the application of network analysis and prosopography can indeed be fruitful for the investigation of the structure and functioning of Hanse trade (see also Poeck 2010). Since almost all merchants in premodern times are supposed to have traded via networks, studies inspired by Burkhardt's may lead to a better understanding of one of the basic structures of the premodern economy.

Reviewed Sample Study 26

Diversity and Development: Trading Societies in Northern Germany (ULLA KYPTA)

Cordes, Albrecht. 1998. *Spätmittelalterlicher Gesellschaftshandel im Hanseraum*. Köln: Böhlau.

Methods: classification/types, comparison, source interpretation/hermeneutics

Sources: court records (urban), merchants' books, merchants' letters, minutes of town meetings, urban administrative sources, wills

Cordes' study sets an example of how researchers can figure out complex phenomena from a range of different sources. Cordes is a legal historian, and his aim to depict clearly delineated categories is in a way more typical for a legal than for an economic historian. The study of trading societies, however, is one of the many areas where economic and legal history overlaps and interacts. How merchants cooperated is a question of interest to both groups of historians. Furthermore, economic historians tend to apply the concepts of trading societies developed by legal historians, and it therefore seems important to know not only what these concepts are but also how they have been created. Cordes' book is one of the most important recent contributions to the study of trading companies. He broadens the focus from trading houses to "all forms of cooperation that aim at drawing profits by trading" (5). He wants to find out what kind of trading societies existed in the Hanse area (roughly Northern Germany) between 1250 and 1500. Cordes' study springs from the insight that legal as well as economic historians tend to generalise findings from a specific region and a specific period, and often fail to make sure that what was true for, say, Tallinn in the sixteenth century is also true for Lübeck or Hamburg in the fourteenth century, let alone the whole Hanseatic area (11). Cordes' book corrects this mistake by elaborating on what type of trading societies existed when and where.

He comes to the conclusion that at the beginning of the fourteenth century, every society to which both partners contributed capital was called *societas* (Latin for society). Only one partner did the work. During the fourteenth century, new Low German names like *wedderlegginge*, *mascopey* and *selschap* were used, but different names didn't necessarily denote different forms of societies. In the course of the fifteenth century, two important transformations took place: it was now possible that both or all partners could work for the society, and disclosed societies emerged.

Cordes stays on top of the quantity and diversity of the sources by analysing them in two steps: the first and largest part of the book consists of subsections that each deal with one type of source. Each chapter carves out the forms of cooperation that these particular types of sources allow us to see. The second part combines these findings: each subsection here is concerned with a different time period and depicts how cooperation changed and evolved over time.

In the first part of the book, categories of business organisations are created. Each subchapter starts with a short description of the source type: Who wrote it, how and why? Cordes' basic methodological assumptions are thus that the sources can be grouped into these categories and that each group should be treated differently. He then analyses what this particular type of source tells us about trading societies. The first categories are created in subchapter (2): Cordes starts with the very basic information contained in the Niederstadtbuch, a city book in Lübeck. The (usually two) members of a trading society had the clerk of the Lübeck town council write down who contributed how much capital, and what their cooperation was called.

Cordes builds his two first categories according to these two very basic criteria. One type of society was called *vera societas* (or real society) and emerged when both partners contributed capital. The other one has no contemporary name, and only one partner provided capital. This can be called commission business in modern terminology. These two types then serve as index fossils (*Leitfossilien*, 115). Cordes analyses the remaining source groups by asking: Can we find the two types in this source type as well? If yes, what else can we discover about these types? If not, what other types can we locate, and how do they differ from the two basic types?

The analysis of the different source groups not only yields a categorisation of the main types of Hanseatic trading societies, but also leads to the conclusion that these main types can be found in all the main Hanse towns, even if the towns belonged to different legal systems (275). In the second part of the book, the chronological comparison can therefore be done without the need to differentiate between the different towns and regions. Cordes analyses the transformation of the types of societies for every 50 years (1270, 1320, 1370 and 1420). He poses four questions which he identified in the first part of the book as the ones that capture the most important characteristics of a society: What was the society called? Who contributed capital, one partner or both? Who did the work, one partner or both? How were gains and losses divided? In the second part of the book Cordes thus employs the categories, which he has worked out in the first part, to tell the story of a chronological development.

Cordes analyses a wide variety of sources, most of which are edited:

1. minutes of the hanseatic diets;
2. the Lübecker Niederstadtbuch (records of the town council) where societies were recorded from 1311 to 1361 (Cordes et al. 2003);
3. partnership agreements from various court records (1260–1499; editions: Thierfelder 1967; Hildebrand 1872; Schroeder 1964–1968);
4. wills from Lübeck, Hamburg, Stralsund and Tallinn (1286–1579, see Loose 1970; Brandt 1964; Seeberg-Elverfeldt 1975);
5. merchants' account books and letters (1330–1418, editions: Mollwo 1901; Koppmann 1885; Nirrnheim 1895; Lesnikov 1973; Stieda 1921); and
6. decisions of the town councils from Lübeck and Tallinn (1463–1554, Ebel 1952, 1955–1967).

Cordes' study aims to lay the ground for comparisons with other forms of trading organisations in other parts of Europe and the world. His approach can also be inspiring for historians who are about to analyse different types of sources from different time spans and are searching for a methodologically sound way to do it.

Reviewed Sample Study 27

Institutions for Commercialisation: Holland's Commodity Markets in the Late Middle Ages (ULLA KYPTA)

Dijkman, Jessica. 2011. *Shaping Medieval Markets. The Organisation of Commodity Markets in Holland, c. 1200 – c. 1450*. Leiden: Brill.

Methods: comparison, descriptive statistics, institutional analysis

Sources: accounts, charters, monastery accounts, privileges, urban accounts, village by-laws

Dijkman's book on the commercialisation of Holland's economy gives a very nice example of how the combination of qualitative and quantitative methods enables a researcher to approach a topic from different angles. These approaches do not compete with each other: Dijkman does not study the same sources with a quantitative then qualitative method and contrast the results. Instead, she uses various approaches to exploit different source material and can thus enhance and deepen her understanding of the process that shaped Holland's institutions during the Late Middle Ages.

Dijkman deals with the question as to why Holland's economy was commercialised quite late in comparison with England, Flanders or the Rhineland, but then did so very successfully and in a very speedy process. She comes to the conclusion that good institutions fostered commercialisation. "Good" means that these institutions reduced transaction costs and thus promoted exchange. Holland's institution can be regarded as good since vertical as well as horizontal constraints on economic activity were weak: no strong lords shaped institutions to their favour, and no influential collectives like guilds could exploit economic opportunities exclusively for their members. But even more important were exogenous factors, so Dijkman claims, that is, developments and changes that were not institutional, but had an impact on the institutional set-up. In Holland, the subsidence of the peat soil in particular changed the conditions for economic activities: it became very difficult to harvest grain, so the peasants specialised in pastoral farming and other forms of agriculture that were market-oriented. The favourable institutions enabled the market actors to deal with these changes to their advantage, in other words to transform adverse agricultural conditions into a commercialised economy.

Dijkman's study is thus based on an institutional analysis. She defines institutions like North (2005, 3) as "humanly devised constraints that shape human interaction". Institutions lower transaction costs and can thus foster exchange. In contrast to North, Dijkman does not claim that institutions are always efficient (in other words, all institutions lower transaction costs). Rather, she follows Acemoglu et al. (2005) in their 'social conflict view' of institutions: institutions are shaped by the politically influential group according to its needs. Since she does not simply assume efficiency, it becomes important to study if and to what degree institutions were in fact efficient. In the first two parts of her book, Dijkman analyses how institutions in Holland lowered transaction costs. In the third part, she investigates the effect of the institutional set-up: Was exchange encouraged or not?

Dijkman splits her qualitative institutional analysis in two parts which allows her to approach the institutional set-up from two different angles. First, she analyses places of exchange like fairs and rural marketplaces. At these places of intensive exchange, search and information costs as well as bargaining costs were low, since different commodities as well as buyers and sellers were easy to find. However, rent-seeking opportunities were also plentiful, but since neither strong lords nor strong guilds had emerged in Holland, these rent-seeking opportunities were not exploited in a way to harm market activities. Second, Dijkman analyses rules and practices that influenced transaction costs at all places of exchange. She studies one example of an institution that lowered the cost of matching supply and demand, the weight houses where commodities could be measured and weighted. They thus reduced the cost of information. Next, she analyses one example of an institution that had an impact on security, namely, the urban regulations that secured contract enforcement. As should be clear by now, Dijkman makes very conscious choices about how to proceed in her study, and she always informs her reader how and why she made her decisions. For example, of all the possible trade venues that one could study in part one, she opts for (a) fairs, since a number of small fairs developed in Holland during the Late Middle Ages, which runs contrary to developments in other parts of Europe, (b) rural places of exchange since she suggests that rural commercialisation played an important part in fostering exchange relations in Holland, and (c) the staple of Dordrecht, since exchange relations were exceptionally regulated and formalised here.

The second question (Did these institutions foster exchange?) is answered by a descriptive statistical analysis of price data and a comparison with England and Flanders. The analysis of wheat prices aims at assessing the degree of market integration in Holland in comparison with Flanders and England. The data does not allow us to study market integration on a regional level within Holland. Thus, Dijkman analyses how Holland's market is integrated with markets abroad. She first estimates price volatility by calculating variation coefficients over monthly and annual prices. Second, the coefficients of variation are compared for different price series. This is measured as a correlation coefficient. The results suggest that "prices on Holland's wheat market moved more closely in concert with prices on wheat markets abroad than they did in England or in the Southern Low Countries" (354), which would point to a comparatively high degree of market integration. The second part of the qualitative analysis is more conclusive. To assess market orientation, Dijkman estimates the percentage of the labour input devoted to providing goods and services to the market. The percentages for Holland, Flanders and England are then compared: England was distinctly less commercialised than Holland; Flanders was more commercialised than Holland in the fourteenth century, but Holland overtook Flanders during the Late Middle Ages and reached a very high degree of market orientation around 1500: roughly 90% of labour input was devoted to market-oriented activities.

The different parts of Dijkman's study rely on different source material, which allows her to paint a colourful picture of Holland's commercialisation. Edited collections of charters, accounts and by-laws by central government and local authorities provide the material for the survey of fairs that Dijkman exploits in her analysis of trade venues in the first part of the book. Information about rural weight houses can be found mostly in accounts that are not edited. To study the institutions of contract enforcement, Dijkman analyses charters of urban liberties (privileges) which are edited. The calculation of market integration is based on wheat prices from two price series: one from the Catharinagasthuis in Leiden, an urban hospital account, and one from Leeuwenhorst Abbey in Noordwijkerhout, a monastery account. The share of labour input is estimated on the basis of secondary literature.

All the source material is listed in different appendixes and thus easily accessible for further studies, for example for comparisons with institutions for contract enforcement or trade venues in other regions of Europe. Furthermore, Dijkman's multifaceted approach shows how an institutional analysis can be undertaken even if quantitative data from the region is lacking.

Reviewed Sample Study 28

Prices and Wages in the German Territories (MARK SPOERER)

Elsas, Moritz J. 1936/40/49. *Umriß einer Geschichte der Preise und Löhne in Deutschland. Vom ausgehenden Mittelalter bis zum Beginn des 19. Jahrhunderts*. 3 vols. Leiden: A. W. Sijthoff.

Methods: descriptive statistics, source presentation/edition

Sources: urban accounts

The collection of price data is as old as economic history as an academic discipline. For the German territories, Elsas compiled a path-breaking book series. Elsas was an economist by education and specialised in working-class household budgets. From 1924, he compiled an index of social welfare in Germany, which was published bi-weekly and then even weekly. In 1929, he was among the initiators of the International Scientific Committee on Price History supported by the Rockefeller Foundation that was led by William Beveridge, director of the London School of Economics and Political Science (LSE). A year later, Elsas became representative of the committee's German section (apart from England and Germany, there were also sections for the United States, Spain, France, Austria, Poland and the Netherlands; see Dumoulin 1990; Demade 2018). Being of Jewish origin, Elsas and his family had to emigrate from Frankfurt/Main to London in 1933. There he started to work for Keynes and to teach at the LSE, where Beveridge, who published his volume on

English price history in 1939, supported him. Despite his emigration, Elsas managed to publish volume 1, which was devoted to prices in the South German cities Munich, Augsburg and Würzburg, in 1936. Volume 2A followed in 1940, and the last one, 2B, in 1949 (both on Frankfurt/Main, Leipzig and Speyer).

Originally, the members of the committee had intended to confine themselves to the compilation of price series, which were collected in local archives. The interpretation should be left to the readers, that is, the academic community. Although the collection and compilation process turned out to be much more arduous and costlier than intended, some collaborators were no longer satisfied with this (self-imposed) restriction. Elsas was one of them. His argument was that the archival material, which he and his collaborators read, would be transmitted by the publication to the reader only in a condensed form. Not making use of his knowledge, Elsas argued, would not conform to the academic goals of the project (Elsas 1949, VI; Cole and Crandall 1964, 382).

Elsas presents his sources and the methods of their collection in an exemplary way. In volume 1 he first lays out (and indeed, starts to analyse) the prices and the caveats of their interpretation, followed by a description of how the prices were extracted from the sources. Two large chapters on coins and currencies as well as measures and weights should help the reader to convert the price data in order to make them comparable. Elsas then proceeds to a very detailed description of the sources. After these extremely detailed introductory remarks, the price series finally starts on page 539. Elsas was too much of an economist interested in living standards to omit wages. Therefore, he devotes another 70 pages to nominal wages and also calculates real wages.

His analysis of the data (descriptive statistics), which he himself describes as preliminary, parallels results by Abel, who published his pathbreaking book on agrarian cycles and crises (Abel 1935). Elsas finds that prices of cereals and other consumption goods fluctuated between the mid-fourteenth century and the early sixteenth century around a stationary trend. In the South German cities, food prices increased from the second half of the fifteenth century—in Frankfurt/Main, Leipzig and Speyer only from the second quarter of the sixteenth century—until the outbreak of the Thirty Years' War. The incredibly high population losses led to a decrease of demand and thus of food prices (in all six German cities between the second and third quarters of the seventeenth century), which regained momentum only in the last quarter of the seventeenth century, when the population increased again. Elsas identifies population changes as the most important component for the price variation, and explicitly casts doubt on the relevance of monetary factors such as the influx of Spanish silver or the coin debasements of the early 1620s (*Kipper- und Wipperzeit*).

The nominal wages usually increased from the sixteenth century, but until the early seventeenth century the increase was slower than that of prices. Only then did nominal wages rise more steeply than food prices. Concerning real wages (and thus the living standard of the lower half of society), Elsas' most important finding was that "the fifteenth century was more favourable for the worker than the sixteenth century" (Elsas 1949, 67), when real wages started to decline until the early seventeenth century. The population losses of the Thirty Years' War led to an increase of both nominal and real wages, with a turning point in Southern Germany around 1623. Since prices fell throughout the war, the real wage increase was considerable. In the eighteenth century, however, prices increased (on average) slowly but steadily and faster than wages, so that the real wages fell slightly. Interestingly, the difference between wages for skilled and unskilled workers (the skill premium) started to decline in the seventeenth century because of the more than proportionally high demand for the latter. Elsas also finds that there was in general no or just a slight gender wage gap, except for physically demanding labour. In these cases, and similar to the skill premium, the gender wage gap had a tendency to decline as well (Elsas 1936, 22–25, 70–82, 777–795; idem 1949, 5f., 67–70, 90–92).

Elsas (and Abel) thus discuss on questions which are in the focus of today's debates on the escape from the Malthusian poverty trap and the Little Divergence, for example prices (nominal and real), wages, price–wage relations, consumption baskets, living standards and its relation to population growth (Malthus), market integration, skill premia and the gender wage gap (Allen 2001; Clark 2005, for Germany: Pfister 2017). His main results for the early modern period, which rested on the analysis of accounting books for six cities, have recently been confirmed by Pfister in an analysis of price and wage series for 12 German cities (Pfister 2017, 713–718). The extension of this important issue back into the Middle Ages would certainly be a worthwhile undertaking.

Reviewed Sample Study 29

Connecting Town and Country: Monasteries and Their Account Books (ULLA KYPTA)

Gudrun Gleba. 2007. *Summa summare*: Klöster als Arbeitgeber und Handelspartner. Beispiele aus westfälischen Rechnungsbüchern. In *Kloster und Wirtschaftswelt im Mittelalter*, eds. Claudia Dobrinski, Brundhilde Gedderth and Katrin Wipfler, 171–188, München: Wilhelm Fink.

Methods: microhistory, source presentation/edition

Sources: monastery accounts

Gleba's study serves as an example of a type of article that can be regarded as a strength of German historical research: it comprehensively presents a specific class of sources, shows how to work with them and thereby offers perspectives for future studies. In German research, the terms *Quellenkunde* and *Quellenerschließung* serve to describe such studies, but they are hard to translate, since the genre is not very common in other research traditions. Gleba presents sources to explore the role of monasteries as actors on the market. In her study of monasterial accounts, she shows how Benedictine convents in fifteenth- and sixteenth-century Westphalia were also safely integrated into the network of regional and interregional markets. Her article presents two sets of monasterial accounts from the convents of Gertrudenberg and Vinnenberg (which turned Cistercian), respectively, and discusses how the convent acted as an employer for artisans and as a player on the market. The second point is of relevance here.

Gleba starts with an outline of the research that has already been done using monasterial accounts, that is, studies pertaining to administrative, architectural or cultural history. She stresses the challenges that the study of the accounts pose: for most monasteries, not all of the accounts survive, and they seldom offer all the information one needs in a comprehensive and systematic way. It takes some time to understand the specific logic of a certain series of accounts, and the monastic writers differ considerably as to the emphasis they place on accuracy and precision.

Gleba then presents two exemplary account books. As mentioned above, the case study of Vinnenberg is of interest for this chapter since it shows how the convent interacted with local and regional markets. Gleba first gives a broad picture of the market relations that can be extracted from the monasterial accounts. It was common two male servants of the Vinnenberg convent to travel to the market. The accounts tell us how much they spent for transportation, food and lodging. They regularly visited the market in Zutphen once a year and the market in Deventer up to four times a year to buy, for example, fish, which was especially important for meals on fast days, but also butter, cheese and salt, spices like ginger, cloves, aniseed or cumin, alum for dyeing cloth, rice, dates and figs. Second, Gleba scrutinises one example, the journey to Zutphen in 1502, and lists all the costs that the two servants had to pay for in addition to the price of the goods. For example, weighting butter costed two shillings, a basket two *stüver*, tariff duties amounted to six *stüver* and the shipment to five shillings, and a confirmation that the goods were bought in Zutphen costed four shillings. Gleba marks them as additional costs, but they can also be seen as transaction costs, that is, the costs one has to pay for participating in a market. Transaction costs are notoriously hard to study since information about them is scattered. Monasterial accounts allow us at least a glimpse into measurement costs. The third and last part of Gleba's presentation of the Vinnenberg accounts consists of an extract from the account of 1499 which details the costs of the journey to the Deventer market.

Gleba thus gives a good impression of what the sources look like, and she points to some research questions that can be addressed using these sources. Gleba ends her article by stating that systematic comparisons of a large number of account books from different monasteries are yet to be done. This could yield interesting findings concerning the relationship between different market actors, between town and country and between different economic regions. Furthermore, account books give the opportunity to scrutinise the practice of trade as it was carried out by important players on the market. The transaction costs of market operations could be calculated. Since the sources presented here are not edited so far, anyone who wants to engage with the above-mentioned questions will need to go to the archive and read the accounts. Other monasterial and other account books, however, have already been edited and thus offer a good starting point for studies of monasteries as actors on the market.

Reviewed Sample Study 30

Pressuring Politicians, Facilitating Market Exchange: Merchants' Associations in Germany and Europe (ULLA KYPTA)

Gelderblom, Oscar, and Regina Grafe. 2010. The Rise and Fall of the Merchant Guilds: Re-thinking the Comparative Study of Commercial Institutions in Premodern Europe. *Journal of Interdisciplinary History* 40: 477–511.

Methods: hypothesis testing, institutional analysis, regression analysis
Sources: databases

Gelderblom and Grafe engage in one of the most heated debates in premodern economic history, that is, the question of why guilds existed. Their study shows how different hypotheses concerning the existence of guilds can be tested by employing a regression analysis. This is possible because large quantities of data can be mined.

According to Gelderblom and Grafe, to ask why guilds existed is the same as asking why merchants were willing to delegate control of their own trading activities, that is, why they were willing to form part of a guild. They test the four most prominent hypotheses on guilds: (1) guilds offered protection against predatory rulers; (2) guilds kept merchants from cheating; (3) guilds enabled traders to extract rents and (4) guilds facilitated the matching of supply and demand.

Based on an extensive empirical database, they reject the first hypothesis. The evidence on hypothesis (2) and (3) is not completely conclusive but tends to confirm the assumptions. Hypothesis (4) can be fully confirmed. Furthermore, strong guilds tended to coexist with favourable public institutions such as warehouses and bourses. Contrary to common assumptions, guilds obviously did not exist to substitute urban or state institutions but rather pressured the government to supply these institutions. Gelderblom and Grafe summarise this quite revolutionary finding: “Far from being the backward-looking institutions of Adam Smith’s imagination, opposed to all novelty, they might have played a major role in the establishment of a wide variety of mercantile institutions in Europe” (506).

In addition, Gelderblom and Grafe cannot find a general trend towards more (or less) delegation of control. At least for the time between 1350 and 1650, they argue, merchants did not find one optimal solution. Rather, various competitive forms of organisation coexisted and could be adapted to the political, legal or economic circumstances. Institutional analysis, they claim, should not search for best solutions, but rather depict the variety and diversity of institutions which merchants created, copied and adapted. The authors cite the case of the German merchants in the Netherlands as a representative example of the history of merchant guilds in premodern Europe: German merchants organised their communities in Bruges, Antwerp and Amsterdam in different and flexible forms that cannot be correlated with the state formation that happened in this Northern part of Burgundy at the same time.

To test the four hypotheses, Gelderblom and Grafe investigate the relationship between two sets of variables by employing a regression analysis: the dependent variables (that have to be explained) capture the amount of control a merchant was willing to concede to an association, and the independent (explanatory) variables encompass a range of political and economic circumstances. They want to find out which of the latter variables correlate in a statistically significant way with the former variables. In other words, which political or economic circumstances can explain the degree of control that a merchant delegated?

To design the dependent variables, Gelderblom and Grafe create five categories of merchants’ associations that differ with regard to the amount of control that a merchant had to concede if he wanted to be part of that association. Category 1 consists of individual agents, who were in no formal or informal way constrained by a guild. Category 2 encompasses groups with shared social or cultural beliefs, which enabled them to exact peer pressure. Category 3 comprises groups whose members delegated political control to a consul or ambassador. In category 4, associations were granted the right to exact separate jurisdiction and thus enforce internal discipline according to general rules of conduct. The last stage, category 5 associations, had the power to exclude members and to prevent free riding. The historical cases show that this variable of control delegation is an ordered variable, that is, every association that belongs to case 5 necessarily belongs to the cases 1–4 as well. In a first step, Gelderblom and Grafe record their sample of 185 merchants' association on a time line. They reach the conclusion cited above that we cannot find a development towards more or less control delegation over time.

The independent variables, which offer possible explanations for the amount of control delegated, consist of three sets of variables: first the attitude of political rulers at home towards merchants, second the attitudes of political rulers in their host country towards foreign traders and third market conditions, which the authors define as "the scale and scope of the markets in which merchants acted, and the private access to protection, information, and risk management in these markets" (493). Each set consists of a number of variables that proxy the three broad ideas. For example, one variable that proxies the attitude of political rulers is 'political representation'. For each guild of their sample, Gelderblom and Grafe ask: Do merchants participate in the ruling elite of the home town or region? The answer can only be yes or no. One example of a proxy for the attitude of a host ruler is 'contract enforcement': Do merchants have access to, and use, a specialised mercantile court? The set 'market conditions' is the largest one. One of the proxies is 'competition': Do merchants from the host town trade in the home market?

To find out how dependent and independent variables correlate, or in other words to find out which set of variables could explain the amount of control delegated, Gelderblom and Grafe employ a standard maximum likelihood regression (probit). In this way, the authors can test the four hypotheses mentioned above. For example, if predatory rulers were the main reason why guilds were formed, as hypothesis (1) argues, the data should show a correlation between political representation of merchants and a low degree of organisation. This is not the case, and Gelderblom and Grafe thus reject the hypothesis. If guilds were primarily created to prevent merchants from cheating, it is to be expected that associations with a lower degree of control delegation could be found in towns with reliable legal services associations. This turns out to be true. A higher degree of competition correlated with a lesser degree of control delegation, which tends to confirm the third hypothesis that strong guilds prevented competition and were thus able to extract monopoly rents. Hypothesis 4 is also confirmed: the larger the market, the lesser the degree of control that merchants delegated. Furthermore, a positive relationship between control delegation and public goods like warehouses and bourses suggests that strong guilds pressured the ruler for such services.

Regression analysis serves as an adequate methodology if one wants to test hypotheses concerning the relationship between different sets of variables. Apart from the technical knowledge on how to run a regression analysis (see, e.g., Feinstein and Thomas 2002), it requires a very clear idea of the hypotheses that should be tested, that is, a clear delineation of the dependent and independent variables. One needs to know the common assumptions regarding the case in question in order to judge what it is that should be explained (the dependent variables) and what it is that could be an explanation (the independent variables). Furthermore, to run a fruitful regression analysis one also needs to have an in-depth knowledge of the sources. Without thorough knowledge of the historical circumstances, it is difficult to decide about possible causes for the historical phenomenon one wants to explain. The in-depth empirical analysis which has to precede every regression analysis often leads to a good understanding of the limits of the results. Gelderblom and Grafe recognise, for instance, that they cannot say anything about possible religious causes which might have played a role in the formation of merchants' associations.

Every regression analysis needs a comparatively large data set to yield meaningful results. This methodology can therefore not be applied for every possible topic of premodern economic history. Since the history of the guilds is well researched, however, Gelderblom and Grafe are able to access a database which includes empirical data on 185 foreign merchants' communities from today's Germany, as well as Italy, Spain, Portugal, Denmark, Belgium, the Netherlands, France and Britain who traded with Amsterdam, Antwerp, Bilbao and Bruges between 1300 and 1800.

The study shows that if one has to deal with large quantities of data, especially from different regions, regression analysis serves as a helpful tool to test hypotheses about possible relationships between variables.

Reviewed Sample Study 31

Economic, Social and Legal Ties: A New View on Southern German Trading Companies (ULLA KYPTA)

Häberlein, Mark. 1998. *Brüder, Freunde und Betrüger. Soziale Beziehungen, Normen und Konflikte in der Augsburger Kaufmannschaft um die Mitte des 16. Jahrhunderts*. Berlin: De Gruyter.

Methods: discourse analysis, micro-exemplary method, network analysis

Sources: chronicles, court records (urban), databases, urban administrative sources

Häberlein's study of a small Augsburg trading company confirms the power of the combination of different, carefully selected methodological approaches. He offers a new interpretation of the Augsburg bankruptcy wave, an interpretation that takes seriously the request to combine economic, social and cultural explanations. The study focuses on the company of the brothers Hans and David Weyer, who were engaged in trading with Lyon and later centred their resources on lending to the king of France. After the default of the French king in 1557, they went bankrupt alongside a couple of other Augsburg businesses during the 1560s. The bankruptcy proceedings generated a lot of documentation, which serves as a starting point for the analysis.

Häberlein is able to show the meaning of the common statement that family relations were important for premodern businesses: since the better part of a company's capital was invested by family members of the partners, these relatives played a crucial role when crisis hit. If family members extended their credit lines, it sent a powerful signal to other creditors that this business was worth saving. However, family members didn't save their kin just because they were related but applied the common and quite vague norms for good economic behaviour. Häberlein thus concludes that the series of bankruptcies of Augsburg companies in the second half of the sixteenth century was not so much an economic crisis as a crisis of social relations. He uses Bourdieu's concept of social capital to explain what happened: social capital, that is, resources that one possesses because one belongs to a group, was in short supply. It thus could not be transformed into economic capital—relatives didn't extend their credit lines. The lack of social capital transformed the shortage of liquidity into bankruptcy.

Häberlein combines three different methods, which can be labelled as network analysis, the micro-exemplary method and discourse analysis, even though Häberlein himself employs only the first label and leaves his other methodological approaches unnamed. Chapter 1 uses network analysis to carve out the network of the Weyer brothers. Häberlein reconstructs three partial networks: kinship, legal and economic ties. The first network consists of kinship relations in two contact zones: contact zone one comprises all the families who are related to the Weyers, and the second contact zone adjoins the families who are related to relations of the Weyers. The two contact zones add up to 40 families. A third network shows the economic ties between the 40 families. This network is particularly dense: it shows 32 cliques of five and another two cliques of six nodes. The density and interconnectedness of the networks allowed for many transactions to be carried out in favourable business circumstances, but it also made it hard to contain a crisis to just one of the companies. This explains why, starting from 1557 with the bankruptcy of the French king, not only one but roughly 70 Augsburg companies defaulted.

In every chapter, Häberlein's approach resembles the micro-exemplary method. Häberlein can thereby ensure that his case, the Weyers, was not completely unique and can thus tell us something about the workings of early capitalism in general. In other words, he constantly checks the representativeness of his case study. The comparison of the Weyers with other Augsburg companies which went bust shows how the Weyers can be regarded as a typical case of the Augsburg bankruptcy wave. First, creditors stemmed from the urban elite. Contrary to assumptions, investment in trading companies was not something that small investors like artisans or lower civil servants did on a regular basis. Second, most creditors were related to the borrowers. Relatives were in general not more patient than other creditors. The intensity of kinship relations between debtors and creditors did nothing to soften the crisis.

The proceedings of the Augsburg city council allow Häberlein to study how the creditors substantiated their claims for a repayment, and how the Weyers defended themselves. Häberlein searches for key words and concepts of norms that underpinned claims and counterclaims. A comparison with other bankruptcy proceedings shows very similar results: creditors and debtors use the same and often quite vague terms such as honesty or self-interest to denote right or wrong behaviour. Debtors were only able to convince creditors to extend their credit lines if they managed to depict themselves as diligent, upright merchants who had got into trouble out of sheer bad luck.

To collect his data, Häberlein uses a prosopographical approach, that is, he scrutinises different city books from the Augsburg town archive such as the books of the brokers on the Augsburg financial market (*Unterkäuferbücher*), which list a couple of thousand transactions between the 30 companies that were staffed by members of the 40 families of the Weyer network; books of guardianship and marriage contracts to identify family ties between merchants; minutes of the lawsuits at the city council to analyse the words and concepts used by prosecutors and defendants; court records to compare the Weyer bankruptcy with the default of other Augsburg companies; and tax books, chronicles and family archives to extract information about the Weyers and the comparative cases. These data were collected in the course of a larger research project on the Augsburg elites during the sixteenth century.

Since many trading companies left their traces in German city archives, similar studies could be carried out for comparative cases. However, a large database is needed to employ different methods and thus paint a colourful picture, and such a database normally takes a couple of researchers or a number of years to collect.

Reviewed Sample Study 32

Book Trade in the Fifteenth and Eighteenth Centuries (KARINA DE LA GARZA-GIL)

Hellinga, Lotte. 2018. *Incunabula in Transit. People and Trade*. Leiden: Brill.

Methods: analytical bibliography, microhistory

Sources: charters, court records (urban), merchants' letters, wills

Hellinga's book presents an invaluable analysis of the dissemination of incunabula during the fifteenth and eighteenth centuries. This dissemination originated, as Hellinga's findings suggest, from the early printers' keen interest in return on investment. Furthermore, Hellinga's findings demonstrate that the ingenuity of early printer-publishers was not restricted to innovations in book production and the organisation of work within printing houses, but also extended to distribution: they actively planned and maintained trade networks, which resulted in the extensive contemporary propagation and marketing of printed texts. This book expands the scope of an earlier study by the same author: Hellinga 2014 illustrates the extent to which the technological innovation of book production during the fifteenth century reached an equally innovative structure of book trade in Central Europe during this period.

Hellinga's book is carefully arranged in order to depict two distinct stages of incunabula dissemination: contemporary book dissemination, and the later stages of the dissemination process. In the first two chapters Hellinga examines the first traceable efforts of purposeful purchases of printed books, for example at auctions, as well as early examples of printer-booksellers offering their products to potential customers, either through stock lists or printed advertisements (6–39). In the following chapters Hellinga's findings convey an image of the perceptive and resourceful printer-bookseller who is versed in the arts of marketing and contingency planning. For example, Hellinga analyses the unique business model developed by the Mainz printer Peter Schoeffer (89–125) which may seem strikingly modern to today's readers. She argues that it is here where the inventiveness of one of these early printers is displayed at its best, because Peter Schoeffer aimed to meet protracted expectations of local and foreign book markets. Hellinga discusses how Schoeffer himself put to use his already established bookselling network with the intention of matching the tastes and meeting the demands of sometimes considerably different potential buyers. He was able to accomplish this feat by means of what Hellinga defines as different levels of post-production, such as rubrication, illumination and book binding.

The second stage of incunabula dissemination is also outlined by discussing selected case studies. Hellinga presents a later incunabula trade, that of the eighteenth century, as independent from the secularisation of monastic houses, which still played an influential role in the dissemination of incunabula in the book trade, especially in the antiquarian trade of that time. Hellinga's findings suggest that monastic houses were persuaded to sell early printing specimens on those occasions when the titles in question were still available in their collections, either as further copies or as different editions of the text (353–60). Furthermore, the dissolution of collections in the eighteenth century, be it after the death of the owner or as a consequence of financial difficulties, allowed a substantial number of contemporary book collectors to obtain access to larger amounts of early printing material. This, in turn, has direct implications for the research into the dissemination of incunabula during and after the eighteenth century. For example, can the original titles of a tract bound in the fifteenth century be reliably reconstructed (361–69)?

Hellinga's approaches are as diverse as her sources are plentiful: the case studies she presents are, just as in her previous book (Hellinga 2014), examples of micro-history where the physical analyses of incunabula (analytical bibliography) lend a hand in retelling the at times intricate story of the journeys of incunabula across space and time. The study and examination of marginalia, foliation and provenance information present in the books themselves, but also the analyses of correspondence, printed advertisements, wills, court papers and books of charters, are some of the strategies applied by Hellinga in order to formulate her hypotheses.

Both the novice and the more versed in the world of incunables will be able to appreciate the occasional complexity of the case studies, because several chapters contain extensive appendices that provide comprehensive additional data to strengthen her hypotheses. In addition, some of the chapters include tables and charts, helpful for independent consultation. Hellinga's volume is an essential source for book historians specialising in early printed books but also for economic historians interested in the buying, selling and marketing of printed books in the fifteenth century.

Reviewed Sample Study 33

Piracy Is What My Enemy Does: The Delineation of Legal and Illegal Market Activities in the Late Medieval Baltic Sea Area (ULLA KYPTA)

Höhn, Philipp. 2019. Pirates Places, Merchant Spaces? Distribution and Criminalization in the Late Medieval Baltic Sea. In *Merchants, Pirates, and Smugglers. Criminalization, Economics, and the Transformation of the Maritime World (1200–1600)*, eds. Thomas Heebøll–Holm, Philipp Höhn and Gregor Rohmann, 127–144. Frankfurt/Main: Campus.

Methods: comparison, discourse analysis, source interpretation/ hermeneutics

Sources: chronicles, minutes of town meetings

Höhn's study contributes to a comparatively new field of research in economic history: the question of how some practices of exchange came to be regarded as legal and others as illegal. Höhn scrutinises a well-known story in German economic history: the story of the so-called *Klipphäfen* (pirates' nests). A thorough source interpretation helps to see this story in a different light: Höhn analyses well-known sources, but he forcefully asks: Who wrote this source, and why? What were the author's intentions and interests? His study is thus a good example of the power of traditional source analysis that German historiography is famous for.

Höhn shows how during the fifteenth century, Hanse cities established the term pirate (*pyratae*) to denote illegal economic behaviour: pirates seized goods at sea and then sold them on at the nearest harbour. However, this kind of economic action was not regarded as illicit up to the fifteenth century. "Anyone involved in maritime trade was liable to commit violent seizures on sea or, at least, to have them committed for them" (18).

During the fifteenth century, Hanse towns began to single out certain economic actors and accused them of being 'pirates', which was supposed to mean that they acted illegally. But one cannot say that a certain course of action was always regarded as illicit trading. If a man was employed by, for example, the city of Lübeck to seize goods at sea, the Lübeck chronicles never call him a pirate. But if someone from Fehmarn did the same thing, it was disparaged as piracy.

Lübeck serves as an example of a study of the reasons why Hanseatic cities began to denounce some economic actors as pirates: the 'fight against piracy' gave them a justification to take action against their competitors. It served Lübeck as a means to try to keep Dutch merchants out of the Baltic Sea area. And Lübeck invoked the 'fight against piracy' as a justification to impose its rule in its hinterland. For example, Lübeck accused people from Fehmarn of acting as pirates, thus forcing Fehmarn into their dominion. Furthermore, the Hanse cities added a spatial dimension to the question of legal versus illegal trading activities. Rostock and Wismar in particular denounced some of the harbours in their vicinity as *Klipphäfen* (pirates' nests). They not only disparaged some economic actors as pirates but claimed that every economic exchange which was done at that place was illegal. Rostock and Wismar thus forced the peasants and nobles of their surroundings to trade via Rostock and Wismar. To denounce someone as a pirate or a harbour as a pirates' nest served as an efficient means to eliminate competitors while telling the world that all was done for a good cause: to fight evil, that is, piracy.

For a long time, researchers believed this story told by the winners, and celebrated the Hanse cities' fight against illegal economic actions. Höhn can challenge this interpretation, because he combines a discourse analysis of the term 'pirate' with a source interpretation that always asks: Who wrote this source and what was his intention? Höhn thus studies how the term 'pirate' was employed: the term was seldom used during the fourteenth century. Even though the practices of seizure remained the same from the fourteenth to the fifteenth century, their denotation changed. Hence, the term pirate was not used to describe a certain set of economic actions, but it was employed to delegitimise the actions of one's competitors. The discourse analysis, grounded on a thorough source analysis, uncovers the discursive strategies of the Hanse cities in their fight against competitors.

Höhn studies well-known sources. First, chronicles from Lübeck allow him to see how the seizure of goods was regarded as a legal course of action if it was ordered by the city of Lübeck, but was disparaged as illegal if it was done on behalf of another city, count or prince. Second, the edition of the minutes of the Hanseatic diets contain not only the minutes of the meetings, but also the correspondence between the towns. A comparison of this source from the fourteenth century with letters and deeds from the fifteenth century shows how the term pirate was invented with the aim to denounce competitors.

The story of how Hanse towns used the accusation of piracy against their competitors is part of a larger story: at the turn of the Middle Ages, the distinction between legal and illegal markets and market practices was becoming sharper. Höhn shows how the question of what was right and what was wrong in economic behaviour tended to obtain a spatial dimension during the Late Middle Ages and in early modern times. This connection between discourses of legal and illegal markets on the one hand and the emergence of territorial states on the other hand opens up an interesting field of research which has only just begun to be harvested.

Reviewed Sample Study 34

Hunger Can Hit Everyone: How Cities Tried to Cope with Supply Crises (ULLA KYPTA)

Jörg, Christian. 2008. *Teure, Hunger, Großes Sterben. Hungersnöte und Versorgungskrisen in den Städten des Reichs während des 15. Jahrhunderts*. Stuttgart: Anton Hiersemann.

Methods: comparison, institutional analysis, source interpretation/hermeneutics

Sources: chronicles, urban accounts, urban administrative sources

Most research on urban economic institutions nowadays focuses on the question of how institutions affected the efficiency of economic transactions. The frame of this question is the quest for the causes of the Little Divergence: Why did some European towns and regions escape the poverty trap? Was it because of their inclusive institutions or because of the pressure of guilds or because of the sheer diversity of different institutions? Jörg's study reminds us that premodern towns and regions were in the best case just about to escape the poverty trap, but they had not escaped it yet. Hence, hunger crises were well-known phenomena in premodern Europe and the Holy Roman Empire. Long-distance trade and urban economic policies were becoming more frequent and more sophisticated, but they could not yet prevent supply crises. An important part of urban economic policy thus consisted of dealing with the imminent catastrophe of a starving population. Jörg's comprehensive analysis shows how towns in the Rhineland, Alsace, Swabia, the Wetterau and Franconia dealt with this challenge. He employs a qualitative comparison of a number of cities that is quite large for a qualitative approach.

Jörg shows the variety of different urban institutions and policies as well as general trends in urban economic policy in Southern Germany as a whole. Bern, Zurich, Basel, Konstanz, Strasburg, Mainz, Cologne, Frankfurt/Main, Augsburg, Nurnberg and some other smaller towns employed a bundle of different policies. Most of them aimed at regulating the inner-city market, for example trying to improve public as well as private food storage facilities, banning exports of grain, fixing prices for grain and bread or taking action against speculation. They also tried to procure food from towns and regions farther away, but this was so expensive that it did not help much to improve the supply situation. On a general level, Jörg sums up, these actions did not amount to a forward-looking, systematically planned policy of prevention. The institutions shaping the food market cannot be regarded as fixed rules, but rather as a fairly flexible set of regulations that were changed and amended during times of crises. It would have been difficult, however, to prevent any hunger crisis, as Jörg emphasises, since in premodern times hunger was mainly caused by bad harvests and was not so much a distributional problem. To be sure, richer people had a better chance of survival, but during a hunger crisis there was just not enough to eat for anyone, even if everyone had shared what they had. The city councils felt pressure to show some action: the council had to demonstrate that it cared for the *bonum commune* (common good), otherwise its legitimacy would be questioned.

Jörg explicitly justifies his choice of methodological approach: since he opts for a comparative approach and not a micro-study, he is able to draw general conclusions. But as the sources that survived differ widely from town to town, he could not include examples from every city in the discussion of every single policy. A comparison of all the urban policies helped Jörg to determine the most important actions taken by urban councils. When he discusses one of these actions, he does not give an overview of all possible examples but highlights the most typical and most interesting cases. For example, buying of grain from abroad is studied via the examples of Basel, Frankfurt/Main, Nurnberg and Augsburg, even though almost all the towns tried to buy grain from abroad. The comparatively large sample of towns allows Jörg to decide which are the typical and the interesting examples.

A wide range of sources contain information about hunger crises and the attempts to alleviate them. Chronicles give a narrative history of times of hunger, urban accounts show the attempts of the council to buy grain, and urban administrative sources contain the regulations established by the council.

Jörg's study gives a good example of how some economic problems can only be understood if they are regarded as embedded in broader circumstances. Urban policy was shaped by economic needs, but also by the moral standards and norms of the urban society. This broad perspective can further enrich questions of urban economic policy, which have hitherto mostly focused on the quest for efficient institutions for trading: the need to keep the population fed and alive should also be regarded as one of the main areas in which urban economic policy was shaped.

Reviewed Sample Study 35

Small Scale Traders Shy at Transaction Costs: Why It Needs a Formal Market to Explain an Informal One (ULLA KYPTA)

Lambert, Bart. 2016. Merchants on the Margins: Fifteenth-Century Bruges and the Informal Market. *Journal of Medieval History* 42: 226–253.

Methods: descriptive statistics, hypothesis testing, institutional analysis

Sources: urban administrative sources

Lambert's study shows how hypotheses can be tested in a qualitative way. He does not have the luxury of a large data set like the one Gelderblom and Grafe 2010 could harvest for their study (see the corresponding reviewed sample study) and thus could not employ a regression analysis. His study is furthermore very interesting as it offers a rare glimpse into an informal market. The distinction between formal and informal markets is not as easy to draw for premodern markets as it is today. For a market to be informal, there has to be a formal market, too, which makes the other market informal. Without one form of exchange explicitly being classified as legal, there cannot be one that is illegal.

Lambert deals with an informal market which lies in the vicinity of one of the most famous formal markets of late medieval times, the market of Bruges. Bruges enacted quite strict staple rights: most merchandise that entered Flanders had to be brought to Bruges, which was accordingly called the 'staple of Christianity' in an English poem in the middle of the fifteenth century. The port city of Sluys, however, situated at the Zwin waterway that linked Bruges to the North Sea, did not adhere to these rules. Informal transactions here, that is buying and selling goods without paying the dues in Bruges, were regarded as illegal by the Bruges city authorities and were prosecuted by the water bailiff. His records allow us a glimpse into informal market activities. They shed some light on actors other than the prominent merchants and financiers who are often regarded as the heroes of premodern exchange: on the Sluys black market ship crews and mariners were trading, the lower-level staff of the merchant communities, and women traders operating at the margin of subsistence.

In his study of the water bailiff's records, Lambert tests four hypotheses on why the informal market existed: (1) the Dualist school believes that an informal market emerges when the formal market "cannot create sufficient regulated opportunities" (232); (2) the Structuralist school supposes that dominant market actors instruct other people to trade on the informal market in order to reduce their average transaction costs; (3) the Voluntarist school assumes that actors choose freely to act on the informal market because it offers them greater benefits; and (4) the Legalist school argues that the high costs and thus high barriers prevented some actors from trading on the formal market. They were therefore forced into informality. According to Lambert, it is this last hypothesis that fits the sources best. The Bruges market was highly taxed. Merchants had to pay the *droit de congé* or *oorlof* when entering the river Zwin, and they had to pay various duties to use the harbour facilities, to load and unload goods, and so on. These transaction costs paid off for merchants who handled a high stock turnover: the taxes and dues gave access to a market where search and information costs were low, because hostels and inns provided all kinds of information, where Italian bankers and local money-changers offered financial services and where an established court system reduced enforcement costs. But for small-scale traders who stayed in Bruges only for a very short time, who did not open accounts with the banks and were not involved in any lawsuits, the money paid for taxes and dues was lost without recompense. It is these small-scale traders who can be found in the water bailiff's records as the typical actors on the informal market in Sluys, for example poor Flemings, carrying-traders from Holland or Italian shipping crews. Lambert thus sees the Legalist view confirmed: "The regulation of the city's formal trade drove them to the margins of the medieval world market, where they tried to share in its success without meeting its legal requirements" (253).

Lambert sets out to qualitatively test four common hypotheses for the black market. His purpose resembles Grafe and Gelderblom's aim (Gelderblom and Grafe 2010), but he does not carry it out with the same methodological rigour required by a regression analysis. His study can thus serve as an alternative way to test hypotheses. Lambert implicitly assumes that the four hypotheses can be confirmed or rejected depending on the characteristics of the traders active on the Sluys market. He does not state this at the beginning, but it becomes clear while following his argument: he subdivides the traders of the Sluys markets into different groups and then asks which hypothesis would forecast this type of trader to appear on an informal market. Lambert is thus able to confirm one hypothesis and reject the others.

First, he scrutinises traders from Flanders. More than half of them are classified as poor. In Lambert's interpretation, this suggests that "these were the people for whom the additional costs inherent to the staple system were not of marginal importance", who were thus forced onto the informal market by the entry barriers to the formal one. Poor merchants on the informal market thus add proof to the Legalist school's assumptions (4). If the same merchant was recorded in sources from the Bruges formal market as well as in the water bailiff's accounts from Sluys, this would strengthen the Voluntarist assumption that merchants decided without coercion in which market they wanted to participate. But only very seldom can one of the Flemish traders also be found in sources from Bruges, trading on the formal market.

Second, Lambert draws up basic descriptive statistics of the traders from outside Flanders. Members of the large and powerful merchant communities from Lucca, Florence or the Hanseatic league did not show up in the bailiff's records. On the whole, only very few of the offenders belonged to the elite traders and financiers. These few acted as the Voluntarist hypothesis (3) suggests: they evidently traded in Sluys because they wanted to do so, even if they were able to trade in Bruges, too. However, these merchants were a small minority of the offenders. Most of the actors of the Sluys market did not have the choice to trade in Bruges. Hollanders, Zeelanders and Bretons did not have a permanent community in Bruges. Mariners and shipping crews also traded on a small scale only. Lambert thus rejects the Voluntarist hypothesis as largely irrelevant for explaining the Sluys black market.

Merchants' factors, clerks, errand boys and other employees of the merchant colonies were numerous among the offenders. At first glance, this group seems to affirm the Structuralist interpretation (2) that the employees were ordered by the employers to supplement their transactions on the formal market with their own activities in Sluys. However, no proof can be found that the merchant colonies instructed or even supported their employees in their dealings in Sluys. The Structuralist hypothesis hence does not offer a satisfactory explanation for the black market. The Dualist hypothesis (1) does not play a role in the discussion of the traders, as it is instantly rejected with Lambert's firm conviction that the Bruges market was surely large enough for all traders.

Lambert's qualitative test of hypotheses is not as straightforward as the quantitative test that Gelderblom and Grafe employ (see reviewed sample study 30). The main difference is that Lambert does not state so clearly, and in advance, which findings would confirm which hypothesis. He does not explicitly split the four hypotheses into sets of variables which could then be scrutinised and criticised by other researchers. Still, even though he does not employ the technical term, Lambert makes it clear while discussing his findings that he assumes that the social standing and economic capabilities of a group of persons serves him as a proxy for three of the hypotheses: rich merchants in Sluys would strengthen the Voluntarist assumption, employees with orders from rich merchants would confirm the Structuralist hypothesis, but the fact that small-scale, poor traders populated the Sluys market serves him as proof for the Legalist hypothesis.

The nature of the sources determines Lambert's focus on groups of persons. The records of the water bailiff, who was responsible for exercising the ducal authority and jurisdiction in the harbour of Sluys, contain the details of buyers and sellers who were charged with evading the rules of the staple or the payment of the appropriate taxes. The records survive for the years 1400–1411 and 1450–1479. They list 245 cases in which the offence was not judged as severe, and the offenders could simply pay a fine. For the second period from 1450 to 1479, a second source supplements the water bailiff's records: the *Civiele sententien* (registers of civil justice) and city's cartularies state the verdicts of the Bruges bench of aldermen in cases which the water bailiff deemed serious enough to summon the offender to the bench of aldermen. These 53 cases give additional information on the offenders and their motivations.

A comparison between different informal markets, which could serve as a further test of the four hypotheses, would prove difficult: not many markets were as tightly regulated as the Bruges market, so that not many lists of offenders of these regulations were kept, let alone survived. Lambert's study does not only present a source which could be investigated further, but also suggests that if we want to study informal markets, we first have to look out for markets that were formal enough to allow the distinction between formal and informal markets to be drawn.

Reviewed Sample Study 36

Studying Commodity Trade: Grain for Textiles and the Northern European Economy (ANGELA HUANG)

Link, Christina. 2014. *Der preußische Getreidehandel im 15. Jahrhundert. Eine Studie zur nordeuropäischen Wirtschaftsgeschichte*. Köln: Böhlau.

Methods: descriptive statistics, hypothesis testing

Sources: customs accounts

Link's study serves as a classical example of a first step for analysing serial sources by employing descriptive statistics. She demonstrates the many difficulties encountered by a researcher who wants to extract data from serial sources, in her case customs accounts. Link is transparent in her quantitative analysis and thus allows the reader to follow her calculations and keep the reconstruction in mind when interpreting the numbers generated. Furthermore, she studies one of the major commodities which shaped medieval market exchange, namely grain. If we want to understand premodern markets or market systems and certain sectors of trade, we need to collect and analyse data on absolute and relative value and volume of commodity trade. Some commodities are of particular importance and deserve or even need to be studied separately, because they represent larger patterns and dynamics in economic history, and grain can count as one of them. The study of grain trade is therefore of particular interest for economic historians.

Link analyses Prussian grain trade in the fifteenth century. Prussia and the Low Countries are generally characterised as the predominant production regions for grain and textiles in medieval and early modern Europe. The regions supposedly had a strong relationship with each other as, simply put, only grain surplus allowed the growth of urban textile production centres in the Low Countries. The coordination of these markets was important, as the highly urbanised and industrialised Netherlands with their textile production were dependent on grain imports.

The analysis conducted by Link challenges a number of hitherto broadly accepted hypotheses in research, namely Prussia's role as a supplier of grain for North-western Europe, the central role of grain in the local politics of Prussia and the importance of grain trade for the *Agrarverfassung* (the constitution of rural communities) of Eastern Europe. Although her data confirms a strong relationship between Prussian ports and the textile-producing Low Countries, she can qualify the interpretation of Prussia as the granary of North-western Europe. A comparison with existing data for ports in the North Sea suggests that the importance of Prussia as a supplier of grain was only marginal in the period studied here and the amount of grain available for export fluctuated significantly. Furthermore, exports bound for the Low Countries included not only Prussian, but also Polish grain to a noteworthy degree. Link's results can thus lead to a new assessment of the flows of commodities and the integration of markets in the premodern period.

At the heart of Link's study lies the analysis of serial sources, from which she wrests data on volumes and values. Methodologically, the challenge here lies in using such often fragmentary and contextual sources to study movements of goods and patterns of commodity trade. Link's analysis of a 1409 Gdansk customs account, the so-called Gdansk Pound Toll Book (source edition by Jenks 2012), serves as a case study on how to generate data on commodity trade from such sources. When transforming the entries of the Pound Toll Book into usable data on the volume and value of grain exports (including flour and malt), Link faces the problem that the 1409 Pound Toll Book doesn't give the volume of the exports in every entry. Furthermore, volumes are given in premodern units, namely *last*, sacks and tons. The calculation of the overall absolute volume in comparable units is therefore not trivial. Link devises a method to calculate an approximation. There are three types of entries:

1. entries that state the volume of grain exported, with or without other commodities;
2. entries without information on volume, but only listing grain and therefore allowing a conversion of the total value given by average prices per unit; and
3. mixed entries with grain and other commodities, but with no information on the amount of grain.

The analysis of these three types of entries results in three absolute numbers on grain exports (36–7): a definite minimum (1), a reconstructed amount (1 + 2) and a maximum that the exports definitely did not reach (1 + 2 + 3). Calculating the maximum is a way to make use of the entries that otherwise could not be used.

This method allows the calculation of the following values, by type of grain (Table 7.1):

The table shows that a considerable part of the documented 1409 exports is hidden in mixed entries. Needless to say, decisions about the conversion of values and about which values to include in which part of the analysis have a considerable impact on the results—yet it is necessary to make decisions and to make as much use of the sources as possible. Though this calculation gives an interesting perspective on the data, in Link's later comparison with other customs accounts, only values 1 and 2 have been used. These absolute volumes and the share of the respective types of grain are certainly an interesting result in themselves. Together with absolute numbers on both imports and exports of grain calculated from other customs accounts, Link characterises Prussian grain trade as predominantly export trade, particularly of rhy, which mainly came up the river Weichsel to be exported via Gdansk.

Next, exports are put into perspective, determining the share of grain exports in the port of Gdansk's overall turnover for 1409. To evaluate the role of grain in Prussian trade, with Gdansk 1409 as a proxy, the grain

Table 7.1 Exports of grain, flour and malt in the 1409 Pound Toll Book, in *last*

	Rye	Wheat	Barley	Oat	Grain, total	Flour	Malt
Certain	2277.33	1706.77	1134.33	12.50	5130.93	656.35[a]	160.32
Estimated additional amount	214.81	47.51	136.80		399.12	136.68	218.72
Subtotal	2492.14	1754.28	1271.13	12.50	5530.05	793.03[a]	379.04
Maximum	651.30	122.26	115.28		88.84	174.98	203.93
Total	3143.44	1876.54	1386.41	12.50	6418.89	968.01[a]	582.97

Source: Link (2014)

[a]Plus 54 *secke* 86 *tonnen*

exports must be expressed in value to be set against the (estimated) total turnover of the port of Gdansk. Again, Link uses her threefold calculation of (1) a definite minimum using the values for such entries only listing grain, (2) a reconstructed amount, here using average prices per unit, and finally (3) the maximum, using the total values of mixed entries. The values calculated for exports can then be set against the overall turnover, calculated by Jenks 2006 (158)— revealing a share of grain of about a third of the exports documented by the accounts, and over 40% when including flour and malt.

However, when using this number, Link has to deal with an issue that is often encountered when using customs accounts: they are often incomplete. The 1409 account only covers nine months, the period of from 31st of March 1409 until the end of the year. This has obvious consequences when calculating exports and shares in overall trade for a given trade year. Luckily, regulations of the Hanse regarding the so-called *Winterlage* (shipping had to be paused in winter until February 22) mean that unrecorded grain exports could only have taken place in the period between February 22 and March 31. The Gdansk books are kept chronologically, however, only giving dates three times (Table 7.2):

Additional information at times allows the researcher to compensate for lacking dates and other chronological information. Link can make use of preliminary work done by the editor Jenks, who identified 21 movements of ships in the Pound Toll Books in other printed and archival sources. Combined with information on the books, administration and the scribes, the dating of the entries can be refined, and the 3246 entries can be grouped into periods (see table in Jenks 2006, 140) (Fig. 7.2).

Table 7.2 Periodisation of the entries in the Gdansk Pound Toll Books 1409 and 1411, source: Jenks 2006, 135–136

Edition	Period
1–2004	March 3–November 17, 1409
2005–2704	November 18, 1409–(end of year)

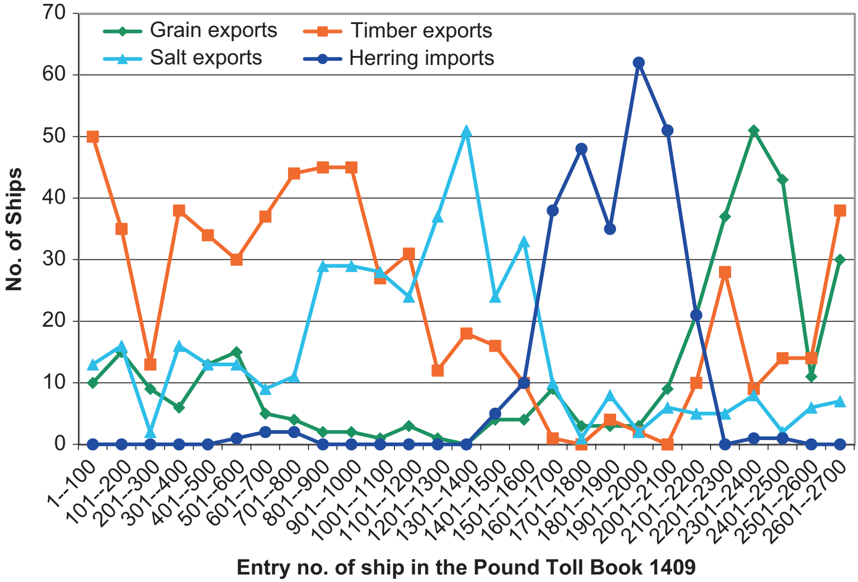

Fig. 7.2 The trade year in Gdansk 1409, source: Jenks 2006, 141

Looking at the main commodities going through the port of Gdansk gives a rough impression of the trade year. Timber exports dominate in spring and early summer (Nos. 1–1200); salt exports are clustered between the end of May and beginning of August (Nos. 801–1600)—matching with the start of herring season in Scania from August 15; herring imports are predominant before August 10 and after November 18 (Nos. 1601–2200); and finally grain exports mainly take place after November 11 (2101–2700). Jenks' analysis of the trade year, with a concentration of grain exports at the end of the year, allows Link to conclude that the missing account for spring 1409 is a minor issue for estimating total grain exports for Gdansk in 1409 (Link 2014, 74–78).

Furthermore, alternative approaches to judge the importance of grain in Gdansk's external trade can lend more robustness to results based on necessary reconstructions and conversions. Link does so by looking into the share of ships that transport grain—426 of a total of 1,522 ships (28%), with 189 only transporting grain. This supports her previous calculations and, in comparison with data for the later fifteenth century, shows that grain trade not only grew in absolute but also in relative numbers. Grain replaced other commodities, which can be explained by the larger increase in value of grain in comparison to other commodities (48–9).

The information gained from these various indirect analyses can be employed in a larger European context, as Link suggests. Existing data on bread and grain consumption and on population (demand), particularly in the Low Countries, can be set against the data generated here, and data on grain exports of other ports can be compared with the data for Gdansk to re-evaluate Prussia as the granary of Europe (80–3).

Customs accounts can be used to study other important commodities. For example, Huang 2013 has faced a challenge similar to Link's in extracting volumes and shares of trade for textiles, a commodity which equals grain in its importance for shaping premodern markets. When analysing textile trade using the 1409 Gdansk Pound Toll Book, a challenge here is that only 85% of the entries on imports and only 20% of the exports give a value—here, only a minimum value can be calculated, as textiles were a highly differentiated commodity and no average prices can be used. Volume is an even greater issue as the accounts give only nonlinear measures, namely *terling* and *packs* of cloth that basically could contain any number of pieces and different types of cloth. Furthermore, the accounts list textiles traded in *laken* (pieces) or ells that are unfortunately also not comparable as different types of cloth varied in size and lengths from place to place. To this date it is impossible to calculate the total volume of premodern textile trade in a metric and comparable format. The volumes stated thus only give a rough indication of the amount of textiles traded. The prices given vary as well and, as they cannot be related to volume in a meaningful way, tell us very little about the products and can mainly be used as indications to group textiles into low-, medium- and high-quality products. Despite all these methodological challenges, customs accounts remain one of the most important sources for extracting information about commodity trade on the premodern market.

Reviewed Sample Study 37

A Mile in Her Shoes: Material Culture and Everyday Life in Fifteenth-Century Urban Society (ANGELA HUANG)

Meek, Christine. 2017. Calciamentum: Footwear in Late Medieval Lucca. *Medieval Clothing and Textiles* 13: 83–106.

Methods: archaeological methods, descriptive statistics, microhistory

Sources: artefacts, archaeological sources, court records (urban), customs accounts, household accounts, merchants' books, pictorial sources, statutes

Meek's article on late medieval footwear is a case study on a basic article of everyday life and a contribution to the broader debates on standards of living and premodern material culture. Her study of Lucca around 1400 (c. 1370–c. 1430) investigates a consumer item that has until recently received only little attention. Footwear is ubiquitous yet elusive in the many urban records, both public and private. It poses a challenge for historical research that the subject has to be approached in an interdisciplinary manner, making use of evidence from archaeology and art history. Meek's study is of interest precisely because it is an example of how an object-oriented study can make use of diverse data. Furthermore, she looks at both supply and demand instead of focusing on one or the other.

Since Meek's study is a first exploration into shoes as an object for study, she does not contribute to a particular debate, but rather offers diverse findings. She makes a number of interesting observations on the demand and supply of footwear in a medieval town. Starting with some descriptive statistics on demand and purchase, she characterises shoes and clogs as a minor expense for both lower and upper classes. Shoes ranged on a low price level but were bought at a high frequency in comparison with other items of clothing. Footwear, though cheap and not at the centre of the consumer's attention, was a personalised item of everyday use, produced in different colours with variations and decorations. Considering manufacture, shoemaking was, even on one market, by far a homogeneous craft: many artisans offered a wide variety of products; others showed a larger degree of specialisation. Next to a broad presence of shoemakers in the city and a local production on order, Meek can show that footwear was pre-made and kept in stock in larger numbers. Imports supplemented the local supply of footwear significantly.

The observations made by Meek paint a fascinating first picture of the market for footwear in medieval Lucca, achieved through a multifaceted local and short-term study (a micro-history), using one market as an example. Her integrative and interdisciplinary approach stands out in its combination of a wide range of different types and classes of sources. This integrative approach has the advantage of giving a vivid and complex picture of demand and supply of a commercialised everyday item. The downside of this approach, though instructive on a general level, is that the combination of a variety of written sources, artefacts and paintings does not allow for too much in-depth study. However, especially for items that are not leading commodities in market exchange, but of importance for local markets, such an integrated view can lead to important insights on premodern consumption.

The sources analysed in this micro-study belong to the academic disciplines of history, archaeology and art history. Particularly the written sources are themselves again a heterogeneous group of private and public records, accounts, and urban administrative and normative sources. These are the sources and their informative value:

- Two household accounts and the account of a children's hospital inform us about patterns of consumption, about prices and to a lesser degree about types and design of footwear.
- The court minutes of the *Corte de' Mercanti* with sporadic declarations of shoemakers' partners, factors and apprentices and of the *Curia del Fondaco*, who supervised humbler tradesmen and artisans, provide us with information on the people engaged in those trades and on quality control.
- The statute of the *Curia del Fondaco* reports on the regulations for manufacture, such as raw materials; the statutes of the tanners' guild, a craft closely related to and in competition with the shoemakers' guild, give additional information on the occupation of the shoemak-

ers (and its limits), as does a petition of the shoemakers to the city council relating to their rights to sell.
- Brokers' books (*Libri de' Sensali*) also document smaller tradesmen and artisans and furthermore give detailed descriptions of the goods as well as prices—retail, wholesale and reductions for substandard items.
- Customs accounts give insights into imports, the sale of pre-made as opposed to custom-made shoes, and the types and designs of footwear traded.
- Paintings depict the selling of medieval footwear and the market situation, and allow insights into the range of products and designs.
- Archaeological sources give us a more concrete idea of what the goods traded looked like and, together with the written sources, allow us to get a better idea of the types and styles of footwear common in medieval times.

Meek's article is an interesting study employing a variety of data on an article of consumption for one market in a clearly delimited and comparatively short period. Her study shows the potential of employing such different types of evidence in gaining a more comprehensive picture of demand and supply for a basic consumer item. Further studies like this one for other times and/or places would allow for comparative studies of everyday consumption in the fifteenth century as a time when society was becoming commercialised, and mass consumption of basic commodities was increasing.

Reviewed Sample Study 38

The Birth of Consumption in the Holy Roman Empire? Asynchronies in Premodern Economic Growth (EVA BRUGGER)

Ogilvie, Sheilagh C. 2010. Social Capital, and the "Industrious Revolution" in Early Modern Germany. *Journal of Economic History* 70 (2): 287–325.

Methods: micro-exemplary method, regression analysis, source interpretation/hermeneutics

Sources: court records of villages, databases

Ogilvie's research on workingwomen in early modern Württemberg is an indispensable contribution to the discussion about (new) methodological approaches to examine consumer revolutions in premodern Europe. In particular, the micro-exemplary method offers the possibility of examining late-developing economies, such as the Holy Roman Empire.

The discontinuity in premodern European economic development explains only inadequately why consuming practices in the regions of the Holy Roman Empire are still an underexplored research topic. With a few exceptions, the existing literature disregards consumerism in German-speaking territories (Sandgruber 1982; Simon-Muscheid 2004; Schmidt-Funke 2017; Ewert et al. 2017). Most studies prefer to examine sources from regions that were less regulated and offer more (or easier) insights into the opportunities for women to participate on premodern markets.

Ogilvie's paper, in contrast, sheds light on the history of consumption in premodern Germany. As she has shown in her work, she aims to verify theoretical assumption through a systematic (and quantitative) investigation of sources. Ogilvie's methodological approach (the micro-exemplary method) is particularly interesting since it bridges the gap between economists and historians as well as between social-economic and cultural historians.

Württemberg differed from the miraculous economies of England and the Netherlands in the seventeenth and eighteenth centuries—and is therefore suitable for Ogilvie's research interest. Unlike England and the Netherlands, Württemberg and others were intensifying social discipline and economic regulation between 1600 and 1800 (296f.): "Detailed microstudies have shown how [the] guilds, communities, and religious institutions generated a rich 'social capital' of shared norms, information, sanctions, and collective action, which significantly influenced the economic options of an otherwise highly market-oriented population. Württemberg is thus a good test case for exploring the Consumer and Industrious Revolutions in a late-developing economy permeated by the 'social capital' of nonmarket institutions" (290).

Working with her standard sample of Württemberg (see Ogilvie 2003), Ogilvie asks if (and when) the Consumer and Industrious Revolutions happened outside the North Atlantic economies (287). It is only by studying the effects of consumption for later-developing economies, Ogilvie argues, that a comprehensive understanding of "the significance of market consumption and industriousness of economic development" is possible (288). She focuses on the differences between the 'miracle economies' England and the Netherlands and the late-developing central Europe economies by analysing female economic and consuming practices and non-market social institutions in premodern Germany (289). Her results shed new light on female market activities (294f.):

- Less than one-third of all women found in her sample worked in household production.
- The most important market activities for women (nearly one-third of all work) were day-labouring and did not form part of a guild.
- One-fifth of women's work was in industrial sectors (craft, proto-industry, spinning, milling) compared to nearly one-third for men.
- Within these industries, men carried out 90% of guilded activities, women 90% of non-guilded ones.

Ogilvie employs the micro-exemplary method, that is, she aims to turn qualitative into quantitative evidence. Therefore, she examines qualitative assumptions about workingwomen and regulation in the different development of European market-based economies with multivariate statistical techniques. For example, by using a tobit regression (dependent variable: retail ratio [number of retailers per 1000 habitants]; explanatory variables: population, date and country) she tags determinants of European retail ratios. Her results underline that "even when controlling for urbanisation and the passage of time, the country differences remain large and significant. There was no significant difference in retail ratios among England, the Northern Netherlands, and the Southern Netherlands. But Württemberg and other German territories had significantly lower retail ratios than England and the Netherlands. Economic outcomes thus differed significantly between societies where retailing guilds were strong and those where they were more liberal" (303f.).

Ogilvie underlines the importance of social capital for the opportunities of women to participate in premodern market-based economies. Next, she chooses four perspectives to examine the impact of social capital on the economic development in Württemberg: (1) social capital and 'industriousness', (2) social capital and commerce, (3) social capital and sumptuary law and (4) social capital and intra-household resource allocation.

By using the micro-exemplary method Ogilvie compares qualitative and quantitative findings: qualitative assumptions get support from quantitative analysis and vice versa. Based on comparisons she combines statistical results with qualitative interpretations. To give just two examples, using the example of (retailers') guild regulation she underlines: "It is sometimes claimed that throughout early Europe guild regulations were easy to circumvent and had no real economic effect. If this were true, one should observe no quantitative difference in economic outcomes between economies where retailing guilds were ubiquitous and strong and those where they were scattered and weak" (301). Based on the quantitative benchmark of the commercial Revolution—the retail ratio—the differences between social and economic regulation in German territories on the one hand and for the Netherlands and England on the other become apparent (302). In her tobit regression Ogilvie controls factors like urbanisation and the passage of time. The results of her analyses remain constant: economic outcomes differed significantly between societies where retailing guilds were strong and where they were more liberal (304).

Furthermore, by investigating local archival sources, Ogilvie observes that sumptuary norms affected people's economic choices and served as instruments for social disciplining (306–308). Ogilvie examines the broader, quantitative impact of sumptuary laws on the consumer revolution by analysing the things people owned. Thereby she confirms her quantitative results on the retail ratio in premodern Europe. Based on the results of her regression analysis she contributes to the research debate on premodern economic growth in Europe.

The foundation of her quantitative analysis builds on a database derived from court records from two Württemberg communities from 1646 to 1800. This database comprises 2828 observations of working men and women (see Ogilvie 2003). Her sample not only allows for comparison of her results to other quantitative data but also for the testing of the robustness in a statistical understanding.

Based on the asynchrony of economic growth in premodern Europe and Asia, Ogilvie sheds light on premodern Württemberg as a late-developing economy. She follows former studies and attributes the birth of consumption to women. Using the micro-exemplary method and focusing on a small district as well as on a specific source, Ogilvie traces workingwomen in premodern sources. Thereby she bridges a still existing research gap and argues against the widespread assumption that workingwomen did not leave marks in premodern sources. Her case study on Württemberg is an important contribution to the ongoing discussion on the consumer revolution in early modern times, and can serve as an inspiration of how to study other late-developing economies. This will lead to a more nuanced picture of the consumer revolution.

Reviewed Sample Study 39

The Harbour Market of Schleswig, Schleswig-Holstein, Germany (ULRICH MÜLLER)

Rösch, Felix. 2018. *Das Schleswiger Hafenviertel im Hochmittelalter*. Bonn: Rudolf Habelt.

Methods: archaeological methods, digital mapping

Sources: archaeological sources

Interpretations of archaeological investigations are subject to changes just like any scientific analysis. These are often stimulated by the implementation of new methods and techniques. This was the case in Schleswig, where the use of geographic information system (GIS) for excavations of the 1970s and 1980s led to a reassessment of the economic function of the harbour. A central question was whether the harbour district also served as a marketplace, since Schleswig had no other marketplace in the eleventh century. This is of great importance considering of the emergence of high-medieval merchandise management in connection with nautical and communal rights, new shipbuilding techniques and changing assortments of goods (Englert 2015).

Schleswig-Holstein was the successor of the *emporium* of Haithabu and represented a node in the trading network of Europe since the 1070s. No later than the twelfth century, the city was a royal seat and the seat of a bishopric and it had gained privileges in 1200. Beginning in ca. 1100, fundamental structural changes occurred which led, among other things, to the creation of a central market in the city. Schleswig is historically classified as a hybrid form between the municipal cities (*emporia*) of the Early Middle Ages and communal cities of the High and Late Middle Ages (Müller 2017).

Research excavations on an area of ca. 3000 m^2 were carried out especially in the 1970s and 1980s in the area of the former banks of the Schlei River and provided significant results on the development of the harbour and the market. The excavations took place in artificial layers of ca. 15 cm. In spite of high precision, the contexts were usually cut, which made analyses difficult. Current processing of the harbour excavations is based on the digitalisation of all excavation plans and data transfer in a GIS. This enabled a three-dimensional analysis of findings and spatial-statistical queries. A tight mesh of more than 1000 dendro-dates allowed a high-resolution chronology, particularly for the late eleventh century.

Rösch can trace the development of the harbour area over a period of ca. 50 years for a length of more than 200 m. From the 1070s, separate long rectangular parcels on the land side were constructed by fences and pits, which were lengthened within 15 years as dams in the shallow water area and protruded up to 50 m into the Schlei River. The dams served not as piers, since the low water level did not enable larger ships to dock. Rather, they formed an extension of the land parcels and were probably used by the respective parcel owners for diverse purposes. It appears that already at the time of the development of the shore area, space for joint trade activities had been planned. A parcel ca. 20 m wide and the corresponding dam were implemented around 1095 and are interpreted as a public marketplace due to their divergent size, a lack of development, their favourable topographical situation for traffic and a striking find distribution (weights, imports, etc.) as well as analogous findings. According to Rösch (178f.), transactions took place in three different spaces: the local space of the marketplace, the private space of the parcels and on the dams connected to the latter (in particular the buildings located there).

Moreover, a temporary, semi-public space is presumed, which was constituted when ships docked, guests were hosted or transactions were made.

The harbour area of Schleswig represents a significant step in the development of medieval harbour and market organisation. Whereas maritime trade in the Early Middle Ages and during the Viking Age primarily took place at seasonal but also permanent riparian and beach markets (Croix 2015; Holmquist et al. 2016), an infrastructurally enhanced type appeared in the ninth century with the harbour market, such as at Haithabu (Kalmring 2010), which is clearly connected to established trade centres. In addition, it is assumed that due to the low water level ships were not only unloaded in the streets but that various trading activities took place there as well. Furthermore, the example of Schleswig pointedly raises the question concerning the decision-makers of such economic and construction arrangements. In earlier research, this was often reduced to the concept of king versus merchants (i.e. hierarchy vs. self-organisation). Recent approaches assume the praxis of reciprocal negotiation processes (Christophersen 2015).

Reviewed Sample Study 40

Economic History and Material Culture: New Perspectives on the History of Manufacture, Distribution and Consumption in the Sixteenth Century (EVA BRUGGER)

Rublack, Ulinka. 2013. Matter in the Material Renaissance. *Past and Present* 219: 41–85.

Methods: source interpretation/hermeneutics

Sources: artefacts, merchants' letters, pictorial sources

With her research on fashion and clothing, Rublack focuses on the importance of material culture for early modern history, in particular the material aspect of commodities and desires. She underlines the necessity to add the analysis of material culture to economic methods in premodern history. Based on a specific material—leather—she examines the manufacture, distribution and consumption of shoes and wallpapers. Rublack's study offers new insights into a "newly leather hungry European world" (47). Her study encompasses the manufacture of leather commodities like shoes and wallpapers as well as the circulation of commodities, craftsmanship knowledge and fashion in Europe in the sixteenth century.

Based on the expanding market for new consumer goods in sixteenth-century Germany, Rublack's study focuses on the letters of Hans Fugger of Augsburg (1531–1598), a German merchant, patrician and Swabian territorial lord. The source interpretation of his letters reveals Hans Fugger as a "very effective business man" (50), but also as a fashion-conscious one, who ordered his (and his servants') shoes in Antwerp. Rublack's study shows that the longing for consumer goods and the desire to wear clothes according to the latest fashion was as important as the requirement to buy well-fitted and comfortable shoes that protected the wearer against rain or snow. More than once, Hans Fugger complained about his shoes and sent delivered shoes back to Antwerp.

Rublack's source interpretation combines socio-economic, political and cultural perspectives and supplements letters, invoices and orders with engravings, pictorial representations, designs, a stone relief and other material sources. With this approach she addresses the problem that all wallpapers and almost all shoes were destroyed over the centuries. One reason is that "leather wallpaper had largely fallen out of fashion in Europe" in the late seventeenth century (84). With the source interpretation of Fugger's correspondences Rublack gains insights into "the fascinatingly dense network of expert agents and contacts the Fugger brothers continued to use across Europa to resource goods and circulate news" (49). She shows how Hans Fugger shared his knowledge about leather, shoes and fashionable interiors within his network. Furthermore, she sheds light on the emergence of institutions, such as the Venetian Foundation of German Shoemakers, and on processes of professionalisation. Hans Fugger bequeathed more than 4700 letters that indicate his "extensive efforts to find materials for the best price and to have them used in the right way" (47). Thousands of his letters were "duly copied for the business archive that Anton Fugger [Hans' father, E.B.] had demanded be set up in his will" (49).

By studying Hans Fugger's correspondences and combining socio-economic and material-cultural approaches Rublack's research offers insights into the "study of the life of materials as well as finished 'things': how they were made, communicated about and used in relation to the possibilities of making and available craftsmanship, as well as in relation to ideas of beauty, status, age, gender and space" (60). Rublack shows how the combination of economic history and material culture links the history of consumer goods to the history of craftsmanship and the history of guilds.

Reviewed Sample Study 41

The Marketplace of Tulln, Lower Austria (ULRICH MÜLLER)

Scholz, Ute Maria. 2015. *Die Grabung Tulln Hauptplatz. Dissertation, Universität Wien. Historisch-Kulturwissenschaftliche Fakultät*. Wien. http://othes.univie.ac.at/40908

Methods: archaeological methods, classification/types, mapping (see digital mapping)

Sources: archaeological sources

This study is currently the most extensive archaeological exploration of an inner-city central market of premodern times. It indicates that the marketplace was not only part of the intra-urban fabric but also a space of diverse social interactions. The origins of Tulln are linked to the Roman Comagena. While no archaeological settlement evidence is available so far between the sixth and the eighth centuries, the place acquired great significance as a royal capital and Danubian commercial centre particularly during the times of the Babenberg margrave (tenth to thirteenth centuries). The marketplace of Tulln was almost completely excavated in 2007/2008 and covers an area of more than 7000 m^2. Thirteen phases verify its use between the twelfth and the twentieth centuries, with its heyday during the thirteenth and fourteenth centuries.

In an intra-urban analysis, Scholz focuses on the market as a space-constructing element in an urban arrangement. On this local level, the different functions of the market are classified: the market not only served as a point-of-sale but can also be regarded as a space of multi-dimensional social interactions. In addition to the stratigraphical classification and dating of the findings and finds as well as archaeometrical, botanical and zoological analyses, the author applies methods of architectural and spatial sociology as well as consumer research in order to portray the market as a built and lived space and as a central element of suburban arrangements. A space syntax analysis focuses on the connection between spatial structures and their use. Its basic assumption is that the collective behaviour of humans in public space is predictable. The fact that humans prefer specific paths and avoid others is ascribed by spatial syntax to urban spatial causes. For Tulln, integration into the urban spaces (access routes) as well as free spaces (open space) and motion sequences can be associated with the market. For an analysis of the findings, the author uses consumer theory approaches. Based on the objects, their condition (e.g. traces of usage) and their contexts (e.g. market surface, pits, structures), an interpretation of market practices (e.g. infrastructure, stockpiling, consumption) as well as acting in space (selling, production, refuse) can be suggested.

Scholz can describe the complex infrastructure that was in place from the thirteenth century onwards. She identifies an increasing spatial differentiation and the placement of product offers by diverse dealers in different zones and differently built spaces. The physical space was mainly paved and can be categorised into market zones without constructions (stands), mobile elements (tents, tables) and fixed local constructions (tables, benches, market stands). Additionally, there were also craft facilities (lime kilns). Further components of the market were a bathhouse, facilities for maintaining market regulations (i.e. pillories) as well as facilities for waste disposal (pits), particularly at the border areas of the market. Although these arrangements were subject to change, they remained in existence into the fifteenth century. Since the fifteenth century, the open spaces increased in size. Only the few documented ground intrusions suggest the construction of demountable market constructions.

The open space served mostly social functions; it provided public space for numerous everyday practices. The market as an economic space was enhanced by its use for cultural, political, urban or religious events. Thus, it offered space for the organisational and stately sectors of the town. The creation of the market reinforced or initiated processes of reconstructions, extensions and changes in use, for example the shift of the city centre and connections to city expansions (Baeriswyl 2006; Krabath et al. 2011). The investigations into Tulln show the significance of material-based studies compared to written sources (Romano 2015), an interdisciplinary evaluation and the potentials of theory-based approaches, which give the study reference character for future analyses of marketplaces.

Reviewed Sample Study 42

Conspicuous Consumption, Based on the Market: Patterns of Consumption at Princely Courts (ULLA KYPTA)

Selzer, Stephan. 2008. Fürstliche Ansprüche an der Peripherie des höfischen Europas. Die Hofhaltung des Hochmeisters Friedrich von Sachsen in Preußen (1498–1507). In *Hofwirtschaft. Ein ökonomischer Blick auf Hof und Residenz in Spätmittelalter und Früher Neuzeit*, eds. Gerhard Fouquet, Jan Hirschbiegel and Werner Paravicini, 55–76. Ostfildern: Thorbecke.

Methods: classification/types, comparison, source interpretation/hermeneutics

Sources: household accounts

The numerous princely courts were among the focal points of spending in the Holy Roman Empire. If a prince wanted to be regarded as a proper prince, he had to show that he was wealthy enough not to care for money—but if the prince wanted to create the illusion that money was not important to him, the princely administration had to be extra careful with it. This paradox of the courtly economy makes it an interesting case for studies in representation and administration. In recent years, economic questions have also gained importance in the research on court culture. Some of the fine things that were paraded around to impress other aristocrats could be produced in the princely domains, but most of them had to be bought on the market. The princely court thus became an important market actor.

Selzer's study examines one example of a princely court as a market actor with a high demand for consumer goods. He scrutinises the account books of the Grand Master of the Teutonic Order in Prussia and analyses them with a qualitative approach. A comparison with the spending patterns of other courts assesses the characteristics of the Prussian court. The study shows how even scarce source material can yield meaningful results if the findings are compared with the results of similar studies.

The court of the Grand Master of the Teutonic Order was situated on the geographical outskirts of the Holy Roman Empire in Königsberg in Prussia, as well as on the outskirts of courtly culture. The next court at Stettin was 450 km away. Selzer studies its spending structure for the early years of the sixteenth century. The Teutonic Order had lost its western territories in the Thirteen Years' War half a decade earlier. Now the new Grand Master Frederick of Saxony tried to establish the court once again as a real princely court, and this meant a court where splendour and luxury could be found. Even though the court in Königsberg was far away from any other court, its spending patterns were very similar to those of other princely courts of the Late Middle Ages: regional products were bought (or even produced locally) to serve the needs of the lower personnel of the court. But all the goods that were consumed in public had to be more luxurious; they had to be imported. At a banquet, the food served was to be refined with exotic spices; the members of the order had to appear in fine clothes to make an appropriate impression, and so on.

Selzer is able to identify the spending pattern of the court because he combines classification and comparison. These approaches often go together: a comparison with similar cases helps to carve out classifications. Classes or types in turn can be compared with similar classes or types from other case studies. In a first step, Selzer compares the goods bought at the Prussian court with the purchases made by the court of the archbishop of Cologne and the mark grave of Ansbach. He thus identifies classes of goods that can serve as indicators of representative consumption: arms, arts, pharmaceuticals, gold works, drinks, spices and cloth. He focuses on spices and cloth, since these two products had to be bought at the market. By scrutinising the princely account books, Selzer carves out the spending patterns for cloth and spices. To get a better impression of this spending pattern, he compares it with the spending patterns of other courts and finds striking similarities.

The account books of the Grand Master serve as his main source. Interestingly, Selzer does not assess the spending of the Grand Master in a quantitative way: he gives some data on volume and prices, but no overview, summary or any statistical measure for these data. Instead, he uses the information to find out which goods were bought as well as to assess the quality of the products. The comparison with the spending patterns at other courts is based on existing studies on those courts (Militzer 1995; Seyboth 1995).

In sum, the court appears as a paradigmatic example of conspicuous consumption (Paravicini 2008). This consumption was based on market structures that enabled the courts to buy luxury products from all over Europe and beyond. In the case of the Prussian court, merchants from Königsberg provided the cloth, spices and other commodities. However, the research on court culture and representation still has to find its way into the discussion on the commercialisation of the European economy. The court can probably also be seen as a catalyst for the consumer revolution. Many interesting studies on the court and the emerging market economy are still to be written.

Reviewed Sample Study 43

Rural Consumption and Market Orientation (ANGELA HUANG)

Sonderegger, Stefan, and Alfred Zanger. 1998. Zur Deckung des bäuerlichen Konsumbedarfs in der Ostschweiz im Spätmittelalter. In *Geschichte der Konsumgesellschaft: Märkte, Kultur und Identität (15.–20. Jahrhundert) / Histoire de la société de consummation: Marchés, culture et identité (XV^{e}–XX^{e} siècles)*, eds. Jakob Tanner et al., 15–33. Zürich: Chronos.

Methods: comparison, hypothesis testing, microhistory, modelling

Sources: monastery accounts

When studying the premodern economy, determining the degree of rural consumption and market participation is an important but challenging endeavour. The question of to which degree premodern societies are market economies is often answered with models or typologies that are based on a very narrow database, as Hatcher and Bailey 2001 elaborate. The fragmentary nature of premodern evidence of course necessitates the implicit or explicit use of theories and models, but the study by Sonderegger and Zanger shows how those models must be challenged and used with care; otherwise, one risks diminishing the potential of the sources to shed light on premodern consumption. The study by Sonderegger and Zanger on peasant consumption of food in the fifteenth century in today's Switzerland tests the hypothesis that the rural economy was in large part a subsistence economy that was barely integrated into market exchange.

Sonderegger and Zanger challenge general assumptions on peasant consumption that have influenced previous research. They depart from the observation that one of the reasons consumption patterns of peasants haven't been studied much is the underlying assumption of a subsistence economy: according to the traditional view, a peasant household would only bring a marginal share of its production to the market and would purchase only few basic commodities and consumer goods on the market. This view is represented by the perception of the 'Whole House' (*Ganzes Haus*, 15–6) as unity of production and consumption.

Sonderegger and Zanger contradict this notion: in their area of research, today's Switzerland, peasant households were embedded in partly complex and partly simple systems of exchange (16). They put together a model using an alternative set of assumptions (31–2):

- Agricultural specialisation reduced the self-sufficiency of peasant farming considerably and made it necessary to fulfil the peasants' demand for basic consumables elsewhere.
- Small-scale and diverse agricultural production structures promoted direct exchange between peasants over short distances, without market exchange.

- Larger agricultural production landscapes demanded more highly organised distribution systems.
- Besides markets, institutions like spitals and abbeys could also take over supplier functions; the dues received, mostly foodstuff, were not only consumed at the spital/abbey, but also sold at the market and to peasants/winegrowers in the region.
- The relationship between the supplying institution and the peasant was shaped not only by levies but also by exchange (in German: *Abschöpfungsstruktur* versus *Austauschstruktur*). This made the dependencies more balanced.

Sonderegger and Zanger present a micro-study in which they investigate peasants' consumption indirectly through the accounts of a religious institution. Since peasants paid duties to certain institutions (*Appropriationsstrukturen*), the sources produced by these institutions contain information about peasants' consumption.

Their regional comparative study employs accounts of religious institutions that provide most data on the agricultural sector that makes up so much of the premodern economy. They conduct micro-studies of the monasterial accounts of a spital and an abbey (Heiliggeistspital St. Gallen; Prämonstratenserabtei Rüti). Particular attention is given to the St. Gallen spital (founded in 1228). In the fifteenth century, it provided the inmates with basic foodstuffs by collecting peasant duties from its properties in a radius of 30 km and more around St. Gallen.

At the heart of their analysis lies a micro-study of one peasant, Hans Nestler, and his family. Based on only 3.5 pages of spital accounts that concern Hans Nestler, Sonderegger and Zanger can show that this family satisfied its consumer needs outside the family by engaging in exchange. The first line of the monasterial accounts gives the name of the debtor, the peasant and his debt to the spital. The following lines list what Nestler received from the spital (*sol*) throughout the year: first the sum, then the goods or money and finally the date. The accounts also list the wine that Nestler delivered in return. The quantitative analysis of the accounts on Nestler brings to light a well-established exchange relationship between the spital and its wine-producing peasants such as Nestler, who exchanged grain, meat, butter and money for his wine. The peasants often remained in debt to the spital.

The analysis of the accounts clearly shows that specialisation in viniculture, promoted by the spital, prevented the peasants from achieving self-sufficiency, whilst the spital doubled or even tripled its income from wine sales between 1465 and 1500. Though wine producers didn't participate directly in the market, Sonderegger and Zanger assume that they used the money received from the spital for market consumption, mainly for foodstuffs. In addition, it is likely that they exchanged goods for goods or money amongst each other. Another potential use of the money was the payment of workers who were needed only temporarily.

The second example, the Rüti abbey, is not treated in such great detail, but serves as a case for comparison. The analysis is based on the accounts of the abbey (*Zinsregister*), which provide information on the deliveries to the abbey, but also on the involvement of third persons—of exchange relationships between tenants of the abbey—and finally on natural produce received by the peasants from the abbey for everyday consumption rather than as investment goods. It supports the observations of the micro-study and puts them into a regional perspective. Within a distance of about 5 km, the peasants mostly covered their demand for foodstuffs, mainly grain and wine, via the abbey.

Of course, there are a number of limitations to the significance of the results. No further evidence was available for these specific cases to confirm assumptions about the degree of dependency from the spital or the composition and productivity of Nestler's production of subsistence goods and export production of wine. The interpretation of the use of the money received from the spital rests on a number of assumptions. The degree and nature of direct market participation as a consumer is also left to the imagination. Such problems will always remain, but the value of such micro-studies is that they can demonstrate that peasants were part of the premodern systems of exchange. The data analysed can furthermore also be used to study premodern commercial production and specialisation in the agricultural sector (Sonderegger 2012). Micro-studies like the one presented here are well suited to gradually creating a more nuanced picture of the agricultural society in relation to an emerging market economy.

Reviewed Sample Study 44

The Basic Question of Cooperation: Principal-Agent Problems (ULLA KYPTA)

Vogtherr, Hans-Jürgen. 1993. Hamburger Faktoren von Lübecker Kaufleuten des 15. und 16. Jahrhunderts. *Zeitschrift des Vereins für Lübeckische Geschichte und Altertumskunde* 73: 39–138.

Methods: source interpretation/hermeneutics, source presentation/edition

Sources: court records (urban)

Vogtherr's article serves as an example of how an interesting newly discovered body of sources can be prepared so that other researchers can work with them in a comparatively easy way. A thorough presentation and description of sources can point out paths for future research and supply the material to carry it out. The sources that Vogtherr presents make it possible to grasp a number of principle-agent relations. The discussion of principle-agent relations is one of the key themes in the research on premodern markets, but it is not always easy to find appropriate sources to study these relations, since merchants did not always explicitely state when they were acting on behalf of another merchant. A merchant's account book tells us about his partners (e.g. Lesnikov et al. 2013), but it only gives us information about this one merchant. Employment contracts and account books of a company let us the glimpse principal-agent relations of one company, but these documents have survived mostly only for the large companies like the Fugger, which cannot be regarded as typical.

The sources presented by Vogtherr, however, explicitly detail principle-agent relations: Hamburg merchants acted on behalf of merchants from Lübeck who wanted to send their goods via Hamburg to Flanders and England. Merchants from Lübeck were exempt from custom duties in Hamburg. They therefore had to appear before the Lübeck city council at the beginning of each year and declare which goods they had traded via

Hamburg during the last year, and which Hamburg merchants had transferred goods on their behalf. The Lübeck city council then confirmed that the merchant in question was from Lübeck—and thus entitled to tax exemption—and sent the confirmation along with the list of goods to the Hamburg city council. Two hundred and forty-four of these urban certificates survived in the public record office (*Staatsarchiv*) in Hamburg for selected years between 1436 and 1527.

Vogtherr doesn't analyse the sources in depth or at length, but rather presents them for further research. He first gives an overview of all the principals and agents that can be found in the certificates: 67 merchants in Hamburg worked for 130 merchants from Lübeck. Most Lübeck merchants were represented by one Hamburg merchant, but some relied on two or three. On the other hand, most Hamburg merchants represented more than one Lübeck merchant, with the key players working for up to 22 Lübeck merchants. Vogtherr then shows how the certificates shed a new light on a well-known source: the Hamburg toll book has up until Vogtherr's article been believed to list all the exports of the Hamburg merchants. In comparison with the certificates from Lübeck however, it becomes clear that the toll books comprise only the export goods which Hamburg merchants handled on behalf of Lübeck merchants. Future researchers should thus keep in mind that the Hamburg toll books cannot serve as a source for the Hamburg export trade, but for trade from Lübeck to Western Europe.

Vogtherr proceeds to give an impression as to which questions can and cannot be answered by scrutinising the certificates. They can serve as a source to analyse the assortment and the quantity of goods that a single merchant traded during selected years. As an example, Vogtherr describes the case of Hermen Hutteroek. Hutteroek traded much more cloth than one would expect according to the standard narrative of Lübeck's gradual decline during the end of the fifteenth and the sixteenth century. The last and largest part of Vogtherr's article consists of an edition of the certificates in an abbreviated form, which tells the names of the merchants in Hamburg and Lübeck, their position in their respective city (as burgher, councilman, etc.) and the date, and then cites the part where the goods and their quantity were listed.

It is important to keep in mind the ubiquity of principle-agent relations on premodern markets when studying commodity flows. For example, the standard narration of Lübeck's decline during early modern times might need revision if we consider that part of Hamburg's trade to the west actually originated in Lübeck. Huang and Jahnke 2012 were able to explain a puzzle about commodity flows to London on the basis of Vogtherr's study: they wondered why goods that in Hamburg were declared as destined for London never show up in the London customs accounts. Part of the explanation consists of the insight that in Hamburg they were put on a ship for London by a Hamburg merchant, who did not say that he was acting on behalf of a Lübeck merchant. These cargoes showed up in London under the name of the Lübeck merchant who was the owner of the goods.

Vogtherr's source presentation allows future researchers to scrutinise the nature of the principle-agent relations between Hamburg and Lübeck merchants in more detail. However, the certificates don't allow the quantification of the overall volume of Lübeck's trade to the west, since the certificates show only the part that Lübeck merchants traded via Hamburg. There is still a lot of work to do to unravel and systematise the principal-agent relations of premodern merchants, and articles such as Vogtherr's that combine a short introduction with an abbreviated edition of interesting sources will make this work easier.

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Volckart, Oliver, and Nikolaus Wolf. 2006. Estimating Financial Integration in the Middle Ages: What Can We Learn from a TAR Model? *Journal of Economic History* 66 (1): 122–139.

8

Reviewed Sample Studies on Money and Credit

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A total of 68 reviewed sample studies provide an insight into how economic history was, is and can be done in practice. The reviewed sample studies contribute to the research questions outlined in Chaps. 2, 3, 4 and 5. They do so by focusing on the economy of the Holy Roman Empire. They thus lay the foundations to combine the current debates in premodern economic history with the diverse and thorough research studies on the Holy Roman Empire.

At the beginning of each reviewed sample study, we highlight the methods and sources employed in the respective work. Different methods and sources are arranged in alphabetical order. Readers who want to learn more about the method or source can look them up in the glossaries (Chaps. 9 and 10). The reviewed sample studies give concrete examples as to how and to what end the methods and sources are applied. Each entry begins with naming the reason why we picked this particular reviewed sample study: Is it an example of a quite typical analysis or does it employ an innovative methodological approach? Does it analyse well known sources of economic history or does it make new sources accessible? Does it form part of a fierce debate or is it a study many researchers rely on? Each entry then sketches the main results of the study, and describes the methods which the study employs and the sources it exploits. The entry concludes with some ideas about how the findings, methods or sources can be inspirational for further research.

The reviewed sample studies are grouped into the three main areas which structure this book, namely production, market, and money and

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credit. Some studies do not clearly belong to one area only, but each study has been assigned to production, market, or money and credit for the sake of clarity.

Reviewed Sample Study 45

Exchange and Interest Rates (TANJA SKAMBRAKS)

Bell, Adrian R., Chris Brooks and Tony K. Moore. 2017. Cambium non est mutuum: exchange and interest rates in medieval Europe. *The Economic History Review* 70, 2: 373–396.

Methods: modelling, regression analysis, time series analysis

Sources: annuities, databases, merchants' books, merchants' letters

Interest rates in the premodern era are often hidden in the sources, if they are mentioned at all. In spite of some improvements in canon law allowing for certain types of interest throughout the thirteenth and fourteenth centuries, the taking of interest remained obscure and thus well hidden in the documents. Nevertheless, economic actors used interest to cover for extra costs of a credit. Being extractable indirectly from some sources, bills of exchange allow researchers to gain access to this valuable data. The historical context for the rise in these credit transactions is given by the Commercial Revolution of the thirteenth century as well as the minting monopoly of the kingdom, which led to an increase in cross-border trade and thus need for foreign exchange. The basic assumption here is that the interest rate was calculated and incorporated into the exchange rate in close relation to the time lag given in every transaction. Besides *time* as one influential factor for the building of interest rates, the authors—following De Roover (1948, 1963, 1968, 1970, 1971)—name other factors, like monetary standard, balance of trade, government intervention and speculation. The function of interest was to build trust and minimise the lender's risks.

The study by Bell et al. examines interest rates in commercial credits all over Europe by a regression analysis using quantitative data given in bills of exchange leading to information on actual interest rates.

Interest rates for short-term loans in the late fourteenth and early fifteenth centuries lay around 10%. More detailed are the results concerning specific cities where exchange transactions were taking place: the resulting interest rates in Florence are 9.76–10.24% (simple) or 10.59–11.15% (compound). In Venice the simple interest rates lay between 9.62% and 10.00%, and the compound interest rate was 10.89–11.30%. For all data and all towns used in this study (see ibid., 380), the interest rate lay between 10% and 16% for exchange transactions. Interestingly, contemporary actors involved in these credit transactions already took into account the time span of the *usance* of the bill in their calculation of interest. Comparing this technique of investment in short-term loans for trade credit with others, like investing in state loans (annuities) or urban *monti commune* or property investment, that yielded only 7–9%, exchange transactions were more profitable. Since they were also riskier (travelling costs for long distances and risk of loss of the bill), the higher interest rate seemed justified and proved the non-usurious character of this business.

The authors use three steps to calculate the interest rates from the given exchange rates. Two cases of contemporary calculation of exchange rates based on the currency can be taken from the source material: first, the mentioning of an exchange rate named 'uncertain' currency A for 'certain' currency B, and second, the percentage of exchange rate itself is given 'better or worse than par' (*meglio* or *pegio*), based on the metallic content of the currencies. According to these two cases, the authors calculate the interest rates from the exchange rates using the following model:

First step: they build sets of matching currency pairs visible in exchange transactions, for example, the Florentine florin and the Venetian ducat between Florence (place A) and Venice (place B) using units of 100 per currency. Between these two currencies, they identify the exchange rate (ER) noted in the correspondence.

Second step: they calculate the spread of exchange (Sp) taking into account the different time spans of the *usance* (i.e. the time span after which the bill expires). Important to note are the unpredictable times of travelling according to the geographical distance of the two places. The *usance* between Florence and Venice was 10–11 days, and from

Venice to Florence 20 days. So the *usance* time for the complete procedure would be approximately 30 days. The authors allow for a tolerance of up to two days; thus they are able to examine 1276 sets for transactions in Florence and 947 sets for Venice. Thus, the exchange spread is derived from the exchange rate given in Venice (ER certain = c) deducting the exchange rate in Florence (ER uc = uncertain); this is divided by the exchange rate in Florence.

Case 1 (certain for uncertain).

$$Sp = \frac{ER^{c} - ER^{uc}}{ER^{uc}}$$

Case 2 (percentage better or worse than par).

$$Sp = \frac{\left(ER^{A} \times \left(ER^{B} : 100\right)\right) - 100}{100}$$

Third step: the annual interest rate (simple and compound) is calculated from the exchange rate with the following equation:

$$IR_{simple} = Sp \times \frac{365}{usance_{AB} + usance_{BA}}$$

$$IR_{compound} = \left(1 + Sp\right) \times \frac{365}{usance_{AB} + usance_{BA}} - 1$$

The data is extracted from a bulk of unprinted merchants' letters in the archive of Francesco di Marco Datini of Prato (died 1411) from 1383 to 1411 and concerns business transactions of seven financial centres. The study thus focuses on one type of loan, namely short-term loans (lasting from 10 days to 12 months) provided for foreign exchange, *not* for consumer credit by local public banks or pawnshops, nor for government debts, visible in annuities. Bills of exchange could be used either as a means of transfer of funds from one place of business to another or as a credit instrument, which allowed the buyer of the bill to borrow money from the seller (=lender) and get some profit by exchanging one currency into another. Merchants involved in such transactions, like Datini, knew very well what the current exchange rates were in the different towns through business letters—these being the forerunners of modern financial press.

Consequently, exchange rates can be regarded as a valuable and useful instrument for calculating interest rates, otherwise not to be found in these sources. By using these serial sources and a quantitative method, the database is widened enormously and can supplement the qualitative source material and methods. The case study proves that interest rates were already incorporated in exchange rates. This up-to-date information was considered crucial for those who traded in bills of exchange. Last but not least, it furthermore emphasises that the foreign exchange market was of vital importance to late medieval trade and economy.

Reviewed Sample Study 46

Capital Markets Integration: A Quantitative Analysis (DAVID CHILOSI)

Chilosi, David, Max-Stephan Schulze and Oliver Volckart. 2016. Benefits of Empire? Capital Market Integration North and South of the Alps, 1350–1800. *Economic History Working Papers* 236: 1–76.

Methods: comparison, network analysis, regression analysis, time series analysis

Sources: annuities, urban accounts, urban administrative sources

This article examines quantitatively the integration of urban annuity markets over a very long period in the Holy Roman Empire (north of the Alps) and Italy. Usually Germany is seen as a financial backwater, whereas Italy pioneered a range of financial techniques. While both the Empire and Italy were characterised by political fragmentation and marked urban autonomy, the Empire had an overarching constitution that Italy was lacking. Their comparison therefore speaks to debates on the extent to which financial development was driven by political institutions, rather than narrow economic and technological forces.

By looking at inter-urban gaps in yields and capital flows, Chilosi et al. conclude that capital markets were significantly better integrated north than south of the Alps, suggesting that the institutions of the Holy Roman Empire played a key role in facilitating exchanges between cities.

This study interprets low (large) differences in yields on urban annuities between places as evidence of high (low) capital market integration. This approach relies on a notorious economic insight, the Law of One Price. In a nutshell, this law holds that if the cost of trading goods between places is low, prices tend to converge. In fact, if price differences are lower than trade costs, merchants will lose money. If they are bigger, merchants could increase their profit by trading more. It is straightforward to extend the insight from goods to capital markets. In the absence of barriers to investment, the difference between yields cannot exceed inter-urban transaction costs for long, with capital flowing from where it is relatively cheap to where it is relatively costly, leading to convergence between rates of returns. However, differences in yields may reflect differences in the risk of default, as well as inter-urban transaction costs. Chilosi et al. deal with this issue by highlighting that, when it came to honouring the terms of the contract, cities often discriminated against foreign investors, so that spatial costs included differences in risk. They also show that the results are robust to the exclusion of observations from cities in the 'Spanish territories' (Lombardy, Naples and Sicily) that were characterised by a particularly high risk of default. Another problem with the methodological approach of this study is that similar yields may also be obtained in the absence of capital flows and low costs, if similar demand and supply conditions are obtained in the two markets. It is therefore advisable to complement the analysis of yields' differences with that of capital flows. Reassuringly, foreign investment was much less frequent in Italy than in the Empire. Hence, this type of evidence, too, points to more segmented capital markets south of the Alps than north.

Examining capital markets over a period of over four centuries across nearly 100 cities involved a massive effort in terms of data collection. Data availability directed the focus of the researchers towards public rather than private borrowing. The focus on urban annuities enabled the use of the city as the unit of analysis, and thus the construction of a data set sufficiently large to be examined quantitatively. The study draws on four types of archival sources: annuity letters, creditors' ledgers, city accounts and edicts. While all these sources report yields or the information needed to compute them (capital invested and annual return), only annuity letters offer comprehensive information on each contract and its history. At the opposite pole, edicts, which were an important source for the Italian markets only, do not refer to individual transactions. Hence, they do not allow reconstruction of capital flows. Moreover, they report the official rate of return, rather than the primary market rate. Differences between market and official rates are potentially large. However, since market rates tend to magnify differences in yields, reliance on official rates for the Italian markets is bound to bias the analysis against finding that these were comparatively badly integrated. In other words, it is not expected to change the main conclusions of the analysis.

Chilosi et al. use descriptive regression analysis to measure capital market integration. Specifically, this technique performs three related functions: first, it summarises large amounts of data with a few figures; second, it assists comparisons as it quantifies differences over time and across space; and, third, it addresses biases in the available data. Thus, regression analysis is used to compute the average yearly rate of change of gaps in yields over a range of areas and periods. These suggest, for example, that in the Empire it was mainly the cost of long-distance investment that declined in the sixteenth century. Before the statistical age, it is very rare that researchers were able to examine time series with the same individuals for the whole period. This study is no exception: different cities are present in the sample in different years. In consequence, changes in the differences between yields over time may merely reflect composition effects, rather than genuine changes in inter-urban transaction costs. Fixed-effects panel data analysis allows taking into account that the level of yields' dispersion varies between cities and hence computing yearly rates of change as if the sample of cities were held constant.

Another technique used by this study is a type of network analysis: model-based clustering with an ultrametric space. This technique identifies groups of nodes in a network (groups of cities here) that are linked by a tie (in this case capital flows). It is particularly suited to this context since it identifies clusters of cities across various levels of network intensity, and thus it makes it possible to fully exploit the information provided by capital flows. The results offer valuable insights into how capital markets in the Empire were structured. All cities linked by strong capital flows were geographically close, with clusters developing around regional financial/commercial centres, like Frankfurt/Mainz and Lübeck/Hamburg, but the cluster that developed in Lower Saxony was comparatively wide.

The study increases our knowledge of the functioning of capital markets in premodern Europe, and offers novel insights into how political organisations influenced transaction costs and market development. It is therefore of interest not only to financial historians but also to students of institutions, market integration and Smithian economic growth.

Reviewed Sample Study 47

Interest Rates Demanded by Jews (CHRISTIAN SCHOLL)

Cluse, Christoph. 2000. *Studien zur Geschichte der Juden in den mittelalterlichen Niederlanden*, Hannover: Hahnsche Buchhandlung: Chapter: Das Konsortium des Gottschalk von Recklinghausen in Overijssel.

Methods: source interpretation/hermeneutics

Sources: mortgage notes

Cluse's study examines the business relations between a Jewish consortium headed by Gottschalk of Recklinghausen, situated in the Dutch region Overijssel, and its Christian customers. By doing so, it reveals the actual interest rates demanded by Jewish financers in the Middle Ages. This is an important finding as in most cases it is difficult, if not impossible, to assess how much interest debtors in fact had to pay for loans borrowed from Jewish moneylenders.

The reason why we mostly cannot determine the actual height of the interest rates is that medieval mortgage notes commonly do not indicate this height, but only a sum which is to be paid back by a specific date. Most mortgage notes only say something about the default interest, which was due when the loan had not been paid back by the date agreed for repayment and which in Germany commonly consisted of two pence

(*Heller*) per pound and week. The fact that most medieval deeds on credit contain information about default interests only has induced several researchers of the past to assume that Jewish moneylenders had not demanded any interest at all as long as the loan had been paid back on time. Although this of course was not the case, it is often impossible to learn anything about interest rates from the main texts of the deeds alone.

Cluse answers the question concerning the actual height of the interests demanded by Jewish financers by the analysis of 49 credit agreements between the above-mentioned consortium and its Christian customers. These documents were issued between 1332 and 1349 and were probably confiscated by the Christian authorities after Gottschalk and his partners had fallen prey to the pogroms of the Black Death in summer 1349. As usual, the Latin texts of the deeds only indicate a specific sum which had to be paid back after 12 weeks; after this time, default or penalty interest (*dampnum*) of three pence (*brabantinos*) per mark became due. Since in the area one mark consisted of 144 pence, the default interest rate was 2.083% per week. Again, from the Latin texts alone, we know nothing about the height of the original loan and the original interest rates.

Cluse was able to deduce the actual interest rates from the Hebrew notes on the back of the documents (*Rückvermerke/Dorsalvermerke*): on the back of the mortgage notes, the Jewish financers recorded which sums exactly they had lent to their customers. Thus, these notes tell us what the main texts of mortgage loans usually conceal: the actual height of the money paid out by the Jewish moneylenders.

Cluse compared the sums written down in the Hebrew notes to those mentioned in the main texts of the deeds, thus showing that in most cases, the sum actually lent by the Jewish financers constituted around 80% of the sum indicated in the Latin text of the deed. As a result, he could show that the moneylenders charged their clients 20% disagio. After 12 weeks, the clients had to pay back 100% of the sum, which constitutes a hidden interest rate of 25% for the first 12 weeks.

When the sum was not paid back after 12 weeks, the interest was added to the borrowed sum, and the 2.083% per week mentioned above was demanded from both the original sum and the interest of 25%, which resulted in compound interest. According to the deed's main text, the same happened again after 12 further weeks, so that the debt (original loan + interest) grew again by 25% (12 × 2.083 = ~25%), and again after another 12 weeks and so on. In fact, a credit was considered lost when it was not paid back soon because it was almost impossible to pay back a loan under these conditions after several years. Besides, for defaulting debtors, such conditions were normally alleviated; Gottschalk of Recklinghausen, for example, granted lower disagios and longer periods of payment when his clients had financial problems.

Cluse's study is so valuable because it reveals how much interest Jewish financers actually demanded in the Middle Ages, and because it proves that loans were not given interest-free for a certain period of time, as was believed by former researchers. The study owes its significance to the sources stemming from Gottschalk's consortium, and especially to the Hebrew notes on the back of the mortgage notes. Sources like these have hardly survived because they were normally thrown away after the business transaction was finished, that is, after the money had been paid back. The sources from Gottschalk's consortium have survived, however, because they were confiscated and preserved in the episcopal archive of Utrecht after Gottschalk and his Jewish business partners were murdered during the pogroms of the Black Death.

Reviewed Sample Study 48

Letters of Exchange (TANJA SKAMBRAKS)

Denzel, Markus A. 2008. *Das System des bargeldlosen Zahlungsverkehrs europäischer Prägung vom Mittelalter bis 1914*. Stuttgart: Steiner.

Methods: comparison, micro-exemplary method

Sources: databases, letters of exchange, merchants' handbooks

The study by Denzel on the system of cashless money transfer by letters of exchange offers a macro-perspective on a long-term approach to the use and function of letters of exchange in Europe from the Middle Ages to 1914.

Thus, Denzel shows the letter of exchange (later the cheque) as being the most important medium of cashless money transfer in the longue durée, putting emphasis on the *system* of exchange markets as a whole. The book's first part on premodern exchange practices contextualises its findings within the grand narrative of the Commercial Revolution as the age of expansion of trade, transportation and money economy, leading to an increased need for liquidity—in spite of the continuous scarcity of bullion.

How exchange markets from the Middle Ages until the First World War were integrated is one main question of the book. Another field of interest is the development and connection of non-European, colonial exchange markets. Elements fostering the development of exchange markets in the premodern era were merchants' colonies as well as fairs. The flip-side of this question, namely why in other parts of Europe—for instance, in the territories of what is called 'the Hanse'—at the same time no exchange markets developed, he answers by saying that there was no need for this kind of market, since other (more traditional and direct) methods of payment, like *overkop*, *wisselbreve* (transmittance) or the *bill obligatory*, successfully prevailed (see Denzel, 48f.). Regarding the system of cashless money transfer until 1620 (Chap. 2 of the book), the letter of exchange was thus an instrument that could be used to solve the initial problem of monetary transaction in trade and credit in spite of the notorious scarcity of bullion in the Middle Ages.

The main market for cashless transfers was clearly situated around the Mediterranean with a shift towards the Atlantic trade in the course of the sixteenth century (until 1620). Afterwards, Northwest Europe (London and Amsterdam) was the centre of technical and institutional innovation concerning the business of letters of exchange.

Medieval fairs like those of the Champagne between the twelfth and the early fourteenth centuries and later the Fairs of Geneva and Lyon (in the fifteenth century) were crucial meeting places of long-distance trade and communication, but they also helped to establish and further professionalise the system of cashless money transfer. This technique was also called 'scontration', meaning the total cash-free payment of traded goods by merchants. They could also claim these payments in the law courts at the fair; thus, the letters of exchange could possess a contract-like character. Florence, Geneva, Bologna and Venice were the leading centres of money transfer in the fourteenth century, as a consequence of their role as trading capitals, followed by Rome, Naples and Palermo. They were linked to other European capitals, like Paris, London and Bruges, as well as Montpellier, Avignon and non-European trading centres, like Tunis, Constantinople and Alexandria. Bruges dominated Northwest Europe as trade centre, especially regarding transactions concerning the Roman curia and its network of financial transactions. Denzel concludes that—according to older findings by De Roover and von Stromer—there were no comparable banking places in Germany. Nevertheless, he postulates that some rare cases of German participation in the Italian-dominated exchange markets existed, for instance by the Nuremberg merchants Rummel and Pirckheimer, who in 1403 obtained a privilege to redeem their letters of exchange *in absentiam* of the papal official Gozzadini (121–122), this being an unusual case. As another example he mentions Cologne as permanent seat of various Italian bankers working in the exchange business in the fourteenth century. Apart from this, Lübeck became an important place of money transfer in the fifteenth century, although not integrated in the system of money transfer by the letter of exchange. Citing Rolf Hammel-Kiesow (2000), he emphasises that the structural difference of Italian and German firms (German: no principal-agent system, no branches in foreign countries, smaller overall volume of trade) might be the reason for the lack of the popularity of the letter of exchange in Germany.

The method of this book is a fusion of different approaches: for the early period from the Middle Ages to the seventeenth century, the author summarises results of former studies and adds some new findings, often confirming conclusions by other authors (see 110–111). This synthesis of different texts and sources—whereby he is able to maintain the macro-level of his analysis—leads to a broad thematic overview of the subject, rather than new insights.

Denzel uses single cases based on source material, like Pegolotti's *Pratica della Mercatura* pointing to the Bardis' Italian network of credit and trade relationships as representative of more general practices, and in a second step compares them with other cases, such as the Peruzzi (using the *Codici della Riccardiana or Codici Peruzzi*). The author mostly uses the sources to reconstruct which places were connected by exchange trade according to the merchants' notebooks. He does not analyse the frequency of contacts between these places, or the number of people involved, or the sums transferred in each place or the mentioned exchange rates—which would allow the more precise characterisation of these contacts and transactions.

While using exchange rate series (price lists) stemming from trade and finance journals and stock markets for the modern period, the author tackles the premodern era until the eighteenth century using similar—but more singular—findings from merchants' notebooks.

Methodologically, the work combines results from former studies (Spufford 1986, 1988; Munro 1991; De Roover 1969) and well-known printed sources (Pegolotti, Pratica della Mercatura 1310–1340, ed. Evans 1970) with the analysis of generally unknown sources from the fifteenth century (i.e. Giovanni-Francesco Pagnini della Ventura: *La pratica della mercatura scritta de Givanni di Antonio da Uzzano nel 1442* and Anonymous, *El libro di mercatantie et usanze de paesi*, ed. Franco Borlandi, Torino 1936) especially merchants' notebooks and letters from Italy, including notations of exchange rates. These *Zibaldone* were miscellaneous writings comprising a pile of relevant information for the merchant. For Northern Europe in the sixteenth century, he uses the *Buch über die Handelsbräuche* (1484–1506) and the *Handelsbuch* by Lorenz Meder, as well as the *Fondament van de Wisselhandeling* by Martin van Velden for the early seventeenth century.

These sources unsurprisingly show that premodern traders all over Europe were noting the actual rates and hence were pre-calculating their chances for profit. On a more general level, these notations of rates underpin the wide-ranging relations between European and non-European trading places, towns and cities.

Reviewed Sample Study 49

Credit and Trust (STEPHAN KÖHLER)

Edwards, Jeremy, and Sheilagh C. Ogilvie. 2012. What lessons for economic development can we draw from the Champagne fairs? *Explorations in Economic History* 49:131–148.

Methods: institutional analysis, source interpretation/hermeneutics
Sources: charters, legal sources, privileges, tax lists

This paper deals with the outstanding early success and decline of the Champagne fairs in mediating international trade from the twelfth to the fourteenth centuries in Western Europe. The purpose of the article is to gain a better understanding about the importance of trust and the institutional basis for long-distance impersonal exchange, namely:

- How would a merchant from one community commit himself to honour contractual obligations towards a member of another?
- What were the efficiency implications that enabled merchants from different localities to trust each other and enter into contracts of differing durations, like short-term credits or future delivery?
- Were formal legal courts or informal ways of enforcing contracts the decisive factor for the rise of impersonal exchange in the Middle Ages?

Although the importance of the concept of credit, trust and reputation has been acknowledged by the German economic historical research (Irsigler 2008), studies dealing with concrete territories within the Empire are still lacking (Häberlein 2007, 47). Therefore, the following reviewed sample study will describe a general debate about the provision of trust and contract enforcement in medieval Europe, namely at the Champagne fairs.

Using the sources (charters, merchants' letters, privileges, tax rolls: registres des foires de Champagne) and the historiography, Edwards and Ogilvie undertook an institutional analysis of the legal courts of the fairs. The authors claim that the success and decline of the Champagne fairs depended on the policies and institutions of the public authorities. They sum up their results as follows:

- The Champagne fairs had an impartial and excellently working court system. Although the county was formally a fief of the kingdom of France, it was almost autonomously governed until its annexation to the kingdom in 1285. This way the counts were freed from royal trade restrictions and created an opportunity for them to offer attractive terms of trade to international merchants. The counts guaranteed property rights and contract enforcements at the fairs through their own law courts, which cooperated with municipal and ecclesiastical officials—who also had their own courts—in the fair towns. Of utmost importance were the so-called guards of the fair, who were officials appointed by the counts and who policed the fairs, enforced contract promises and even rendered justice. There is no evidence to support that international trade developed on the basis of private-order institutions.

- The incentive of the public courts to provide impartial justice at the fairs resulted from the competition created by the existence of three independent courts at the fairs: the comital, the municipal and the ecclesiastical courts. Informal contract enforcement supplied by private-order institutions, such as merchant guilds, like a hypothesis from Milgrom, North and Weingast (1990) suggests, fails to explain the rise of the fairs since the incentive to honour contractual obligations derived from the formal legal courts.
- That merchant communities exercised jurisdiction through their own consuls at the fairs, as put forward by scholars like Greif (2002, 2006a, b) is also not supported by the sources. Merchant communities never obtained legal power for their consuls at the fairs. Besides that, collective reprisals—like a ban of certain merchant communities from fairs—cannot have been a crucial contract-enforcement mechanism, since Edwards and Ogilvie show that there is no evidence for such a punishment in the period of the ascendancy of the fairs from 1180 to 1260.
- The fairs started to decline at the end of the thirteenth century. Edwards and Ogilvie propose that the reasons for the decline of the fairs are the "obverse of the reasons for its preceding success", meaning a lack of impartial justice from the late thirteenth century onwards at the fairs, caused by the takeover of the county of Champagne by the French crown in 1285. The French kings asserted royal authority at the fairs and used the public institutions there (law courts, Guards of the Fair) to suppress their enemies.

The Champagne fairs, where merchants from all over Europe gathered and contracted trade and credit partnerships with durations of several months, give us insight into the development of impersonal exchange. Prerequisites for the ascendancy of the fairs were neither private-order legal provision nor collective reprisals among corporative businessmen but instead impartial law courts as the authors propose. The role of the business communities at the fairs was minimal. As an alternative, the study by Edwards and Ogilvie suggests that the policies and actions undertaken by the public authorities were of crucial importance to impersonal exchange and trust in contract enforcement in medieval Europe. Investigating the full range of mechanisms of how trust was established between merchants and contracts enforced at the fairs offers an essential step towards a more comprehensive theory of the institutions needed for credit agreements and long-distance trade.

The institutional analysis begins with an analysis of how institutions shape forms of economic organisation, and explores the consequence of this for performance outcomes. Institutions are "systems of social factors that conjointly generate a regularity of behaviours", as Greif put it (quoted after Epstein 2009, 72). Historic examples of institutions are, for example, merchant guilds, trading companies, treaties or courts. These institutions serve the purpose of making behaviour predictable and therefore minimising risk and allowing people to make plans or investments. Institutions affect the performance of the economy by influencing the costs of exchange (and production). By exploring motives, beliefs and rules that shape how people behave and make economic choices, we gain insight into the functioning of economics.

The institutional analysis of the authors explains the success of the Champagne fairs through implementation of a well-functioning set of public legal courts, and shows that the policies and actions undertaken by the authorities and therefore by the institutions were the crucial factor for the functioning of impersonal and long-distance exchange at the fairs. The reviewed sample study is mainly based upon charters, privileges and tax rolls dealing with the functioning of the fairs. Some of the privileges guaranteed safe conduct to the visitors of the Champagne fairs, and some of the charters are communal statutes for the fair towns. However, security and contract enforcement may have been the most important institutional services provided by the counts of Champagne, and thus charters proclaiming procedures about trade disputes, contract enforcement and regulations about weights and measures were of utmost importance. Finally, the authors use the tax rolls to quantify the prosperity of the fairs and identify the time of their decline.

The ongoing discussion about institutions that enforced agency relations and trust in premodern trade is a controversial one. Some authors, like Greif, Weingast, North and Milgrom, emphasise the functioning of (informal) reputation-based sanctions for creating trust, while others, like Edwards and Ogilvie, highlight the importance of legal mechanisms and believe that contract enforcement did not take the form of private-order mechanisms. As a response, Greif suggests that both courts and reputation generally matter, but their manifestations and relative importance depend on the historical context (Greif 2012).

Reviewed Sample Study 50

Forms of Rural Credit (TANJA SKAMBRAKS)

Fouquet, Gerhard. 2016. Kredit in der ländlichen Gesellschaft und Wirtschaft während des späten Mittelalters. In *Zins und Gült, Strukturen des ländlichen Kreditwesens in Spätmittelalter und früher Neuzeit,* eds. Gerhard Fouquet, and Kurt Andermann, 17–39. Epfendorf: bibliotheca academia Verlag.

Methods: microhistory, source interpretation/hermeneutics

Sources: court records of villages (*Haderbücher*)

This study takes a micro-perspective on credit relations in the Southern German village of Ingelheim, situated at the Rhine near Mainz, tackling the topic of small or micro-credit in the rural sphere—a topic that badly needs more attention by researchers from continental Europe and especially Germany (Briggs 2009). The main sources are contained in the so-called *Oberingelheimer Haderbuch*—court papers from the village court from the period between 1476 and 1485. These protocols document cases of conflict, but also the variety of actors (peasants, monasteries, hospitals, craftsmen, traders, day labourers, servants and maids and also noblemen) in the sphere of rural credit. The documents show the peasants' involvement in a vast number of informal and formal credit relations: their wages were used to pay back debts, manorial duties were deferred, and cash credit was given to them by neighbours and relatives. These credit activities are embedded in the manorial system and completely intertwined with rural production and the demand of the market.

The close connection between production, trade and credit becomes visible in the fact that all kinds of produce was used to secure credit transactions. The peasants often pawned what they produced or paid back debts in kind—often even long before the harvest. Some of the goods sold to peasants were also paid back in labour services. The rural credit was thus much more based on kind and labour than on coin money.

Fouquet chooses the classical method of source interpretation. He sums up and analyses numerous examples from the Haderbuch to answer the following questions and bring the following insights:

1. He provides new basic knowledge on the hardly visible rural credit networks, by asking which forms of rural credit stand out in these sources.
2. By asking which patterns of distribution of loans become visible, that is, who lends whom, he focuses on the actors involved in these credit transactions.
3. He also refers to the sociological problem of trust in a premodern 'economie morale' (Fontaine 2008; Muldrew 1998; Luhmann 1968), which has been regarded as a major influence in premodern economic thinking and practice. Which role did 'trust' really play in those relationships?

Results:

1. Three major forms of credit stand out in the rural sphere:
    (a) The agistment involving the leasing of livestock (see reviewed sample study by D. Rippmann)
    (b) Forestalling or regrating
    (c) The putting-out system

More generally speaking, credit was an ubiquitous instrument, inherent in the purchase and sale of wine, labour services, wage debts and the payment of outstanding costs for craftsmen. On the one hand, debt sums were often transformed into instalments or deferred for many years. On the other hand, debts were also an effective instrument of suppression in an often-asymmetric credit relation between landowner and peasants.

As other studies from England and Germany have shown (Briggs 2009; Sreenivasan 2004), the villagers of Oberingelheim had many debts, with their manorial lords being in this case mostly local and regional church institutions: the monasteries and churches of Mainz, hospitals in Oppenheim, Ober- and Niederingelheim, the parish church of Ingelheim and the monastery of Engelthal. Besides, noble families like the Wolff of Sponheim emerge as creditors (not as debtors). Although seemingly most credit relations were asymmetrical, some symmetrical relations of socially equal creditors and debtors also become visible in the sources.

Fouquet sceptically concludes that 'trust' as instrument of social bonding seems to be overestimated, since most of the examples point to the primacy of 'mistrust' as leading force. This lack of trust results from the bad payment practices, cheating, hushing up, evading and denial: "The villagers steered their way through the networks of debts". One crucial and critical question to ask here is on how many transactions these results are based, and how many relations between people really become visible in these sources. Here, the methodological framework of micro-history using court minutes only might lead to a bias towards the overestimation of mistrust as dominating force in (rural) credit relations.

Reviewed Sample Study 51

Formalisation of Credit Contracts (STEPHAN KÖHLER)

Gelderblom, Oscar, Mark Hup and Joost Jonker. 2018. Public Functions, Private Markets: Credit Registration by Aldermen and Notaries in the Low Countries, 1500–1800. In *Financing in Europe. Evolution, Coexistence and Complementarity of Lending Practices from the Middle Ages to Modern Times*, eds. Marcella Lorenzini, Cinzia Lorandini, and D'Maris Coffman, 163–194. London: Palgrave Macmillan.

Methods: descriptive statistics, modelling, regression analysis

Sources: annuities, contracts, court records (urban), mortgage notes, notary registers

This study questions the evolution of financial systems. The authors pledge not to take the modern outcome of financial institutions for granted and instead do a functional analysis—as proposed by Merton and Brodie (1995)—of the early modern financial system in the Low Countries. The article examines the role of intermediaries in financial markets, namely of notaries and aldermen that in the end disappeared but whose operations still shaped the financial system's evolution.

Based in part on the conclusions of the work of Hofmann et al. that showed the importance of notaries as intermediaries for private customers in the eighteenth-century Parisian credit market (Hoffman et al. 2000), the authors ask whether notaries and aldermen in the Low Countries could perform similar financial services or not, and if not, why not. The importance of notaries, who covered the whole range of banking business for the Parisian financial market, rested mainly on their ability to reduce information asymmetries between borrowers and lenders. As publicly appointed officials, the notaries combined their professional network with their informational advantages on ongoing business transactions, including property transactions, payment difficulties of certain clients or the issuing of government debt. In theory, the aldermen and notaries in the Low Countries could have performed the same financial services. Therefore, the question is whether the aldermen and notaries only passively registered loans or were active credit intermediaries, like in Paris, on the financial market.

What can be seen is that a greater loan size, loans contracted within the family and real estate or financial assets as collateral all lower interest rate premiums, whereas the involvement of foreign debtors and moveable goods as collateral lead to a higher interest rate premium. The similar tendencies in both market segments suggest that the parties who registered loans with the aldermen and notaries were able to judge a loan's risk accordingly. Therefore, the authors conclude that neither the aldermen nor the notaries obtained a central position in local credit supply. Although many loans were registered with aldermen and notaries in the Low Countries, they didn't acquire the same importance as notaries in Paris for loans. This might be because the obligation to register mortgages and real estate transactions at public courts robbed them of their information advantage. Whereas notaries were important credit intermediaries in Paris, their role in the Low Countries was a different one. This reviewed sample study is a salutary reminder that each premodern financial system had its own merits and one should be careful not to take the emergence of particular forms of financial modernisation in one specific region as the norm.

To answer the question about the role of the aldermen and notaries as credit intermediaries, the authors used a functional perspective, as proposed by Merton and Bodie. This approach rests on two premises. First, financial functions are more stable than financial institutions, meaning that functions are more stable across time and space than institutions. Second, institutional form follows function and thus leads to innovation and competition among institutions, which ultimately results in a greater efficiency of the financial system. By doing a functional analysis, the authors ask why public registration of private loans gradually shifted from the aldermen to the notaries when the institutional framework did not change.

In a next step, the authors collected a database of almost 13,000 credit transactions registered by aldermen and notaries between 1500 and 1780 in the cities of Amsterdam, Utrecht, Den Bosch, Leiden, Antwerp and Ghent (mortgage notes, notary registers; the database is accessible online: https://public.yoda.uu.nl/i-lab/UU01/7UC5BL.html). Based on this data set, they created several descriptive statistics dealing among others with the recorded number of loans, annual value of credit transactions, aldermen's and notaries' shares in total loan amounts, the collateral of loans, and the average and median loan size. Descriptive statistics are measurements used to summarise a specific sample data—in this case, the activities of the credit market in the Low Countries every 40 years—and for statistical interpretation for predictions about the development of the credit market between 1500 and 1780. With this method, the authors only had to create statistics for several years instead of going through all 13,000 credit transactions.

Without going into detail here, one can observe a shift in public debt registration from aldermen to notaries in the Low Countries (with the exception of Amsterdam) between 1500 and 1780. This change can partly be explained by the fact that new collateral forms in the Low Countries, like general mortgage, emerged. Whereas loans with collateral forms based upon real estate and dealings in annuities (*Renten*) required formal registration at the town hall and thereby mostly were recorded before aldermen, new emerging forms of collateral (moveable goods, financial assets) for credits were passed before notaries. Gelderblom et al. conclude that local credit markets in the Low Countries were separated into two market segments (i.e. loans registered by aldermen and loans registered by notaries). On the one hand, this segmentation of credit markets might have facilitated the matching of a heterogeneous supply and demand for loans. On the other hand, the segmentation of the local credit market deprived both notaries and aldermen of their information advantage to reduce information asymmetries between investors and lenders, as was the case with notaries in Paris.

To prove which of the two interpretations is accurate, the authors did a regression analysis (OLS—Ordinary Least Square) of the pricing of risk in both segments: loans conducted by aldermen and loans conducted by notaries. The authors used about 7,000 credit transactions between 1620 and 1780 for their statistical modelling. In the regression analysis, the focus is on the relationship between a dependent variable and one or more independent variables. Here, the authors used information from their credit database about the dimensions of risk (loan size, form of collateral used, relation between debtor and creditor) as independent variables to estimate the dependent variable, that is, the interest rate premium, which is the pricing of the risk of the loans in both market segments. For a better comparison the risk rate on bonds given out by the province of Holland is taken as zero (risk-free). The interest rate premium, which is the dependent variable, is thus the risk rate of the private sector (loans registered by aldermen or notaries) minus the risk-free rate (of public bonds) of the specific time. With the regression analysis the authors compared the interest rate premium between loan contracts recorded by aldermen and by notaries. In both cases a bigger loan size, real estate used as collateral and a close relation between debtor and creditor led to a higher interest rate premium. Since the different variables showed a similar pattern of affecting the interest rate premium in loans recorded by both aldermen and notaries, the authors conclude that both service providers—the notaries and the aldermen—were not very important for the credit supply. Because the registering of the loan at the aldermen or notaries does not seem to have any influence on the interest rate premium, it appears that the aldermen and notaries were only passively involved in arranging credits and had no active role as credit intermediaries.

Gelderblom et al. used credit transactions, like promissory notes, mortgage notes or annuity letters, registered by notaries in their notary registers or by the aldermen in court minutes (schepenbank) for their study. The analysis of the vast material through use of statistics enabled the authors to depict general trends in the credit market, reflected in the value of the loans and in the choice of where the credit was recorded.

This article shows the necessity of critical reflections on studies about the financial market. Unlike in Paris, where notaries played an important role as credit intermediaries as the study performed by Hoffman et al. (2000) shows, notaries in the Low Countries played no important role in arranging credit agreements. Instead Gelderblom et al. point out how subtle regulatory differences from city to city affected the dynamics of financial market evolution.

Reviewed Sample Study 52

Uses and Forms of Money: Book Money and Monastery Accounts (SEBASTIAN STEINBACH)

Gleba, Gudrun, and Ilse Eberhardt. 2011. *Summa Summarum. Spätmittelalterliche Wirtschaftsnachrichten und Rechnungsbücher des Osnabrücker Klosters Getrudenberg – Transkription und Kommentar*. Münster: Aschendorff.

Methods: source interpretation/hermeneutics, source presentation/edition

Sources: contracts, inventories, monastery accounts

In their study, Gleba and Eberhardt analyse two account books from the Benedictine monastery of Gertrudenberg, situated outside of the medieval city walls of Osnabrück. In 1475, the monastery had been connected to the congregation of Bursfelde and the procurator Rembert van Gesteren—later abbot of the Benedictine monastery Iburg (1493–1505)—caused the textualisation of the economic management of the nunnery, which is passed down to us. Both account books, written in Middle Low German dialect, are transcribed and detailed within this study. Listed are the incomes and expenditures of the convent, giving an insight on many different aspects of social, economic and cultural life within the walls of a late medieval monastery and on the uses and forms of money. The 'mediocrity' of the case of Gertrudenberg—often repeated by the authors themselves—shows the importance of quantitative and serial sources for the investigation of medieval daily life and the practice of using money. The publication also gives a peoples' register, a location register and a glossary of unknown and (often) abbreviated terms for measures, weights and currencies such as *postgl* for Postulatsgulden (a gold coin struck by Rudolf von Diepholz, 1426–1455 bishop of Utrecht). This shows that for most modern historians these unknown terms of the economic sphere are the main obstacle to dealing with quantitative sources of that time.

Apart from the expenditures connected to the monastic construction activities—the payment of craftsmen, the equipment of the church, the building of a water pipe or the restoration of an organ—the text reveals the social networks of the convent and the nearby city with their noble families, as well as giving a lot of prices for nutrients and goods. Between 1481 and 1483, a person called *Ludeke to Werdesche* tried to receive the inheritance of his recently deceased father. He gave two shillings to Rembert van Gesteren to support him in his attempt. A well-laid out sum, for a few entries later 10 shillings is mentioned for the contract between Ludeke and the monastery, transferring to him the heritage of his father (Gleba and Eberhardt 2011, 39). Between 1476 and 1493, the monastery received 81 marks and 8 shillings (donations and offerings), while 1021 marks, 11 shillings and 7 pennies were spent during 1476 and 1498 mostly for the renovation of the nunnery (Gleba and Eberhardt 2011, 40). But the sums considering the construction work also touch different economic and social aspects: the periods of time in which the labourers worked and the duration of different tasks, the loan of various craftsmen (i.e. masons, carpenters or roofers) and the differentiation of the loan between foreman, journeyman and servant, as well as the wage for artists (carver, painter and glassmaker) and their works (Gleba and Eberhardt 2011, 35–42). At least we can see the different forms of levy and service done by the dependent farmsteads ranging from cereals (rye, barley and oats) to livestock (calves, ducks and chicken) through wood and tensioning service as well as even money (more than 33 *mark* and 4 *Gulden* in total) (Gleba and Eberhardt 2011, 44–50).

As some currencies are named, specifically *Rheinische Gulden* and *Kölnische Gulden* as well as *Davidsgulden* from the bishopric of Utrecht (David von Burgund, 1455–1496) and *Andreasgulden* from Brabant (struck between 1467 and 1489), these denominations show the trade routes and circulating coins within the region. Also, pennies (*denarius*) as well as their sections half-pennies (*obolus*) and quarter-pennies (*quarden* or *vering*) are mentioned as small change. Sometimes the recorder even gives the exchange rate, for instance when he states *3 kolsche gl den gl 13 ½ s facit 3 mr 4 ½ s* (= 3 Gulden from Cologne [gold], each for 13 ½ shillings, altogether 3 marks and 4 ½ shillings [of silver]).

At least counting books such as the example of Getrudenberg give a good idea of why and how economy and society are so deeply connected in pre-modern times. It would be useful if more studies like this one on serial sources were published in a print or digital version to allow the widespread comparison of prices and exchange rates in late medieval times and to look behind the different networks of economic institutions of that period.

Reviewed Sample Study 53

Small Credit and Pawnbroking (TANJA SKAMBRAKS)

Groebner, Valentin. 1993. *Ökonomie ohne Haus. Zum Wirtschaften armer Leute in Nürnberg am Ende des 15. Jahrhunderts*. Göttingen: Vandenhoeck & Ruprecht.

Methods: source interpretation/hermeneutics

Sources: court records (urban), privileges for Jews

Small loans and pawnbroking as emergency credit or survival credit are dealt with by Groebner in his book titled "Economy without the House" (1993). This wide-angle study adds valuable insights to the research fields of the history of mentalities, standards of living and every- day history as well as the cultural and social history of the urban poor.

As a fundamental problem of late medieval economy the author lists the permanently restricted supply of money—"a strained liquidity" (191)—together with crises and a rise in prices as the main causes of a constant need for credit. Consequently, debts were ubiquitous in the late medieval town society. They are “differently used instruments of social cohesion and economic bondage” (206).

The objects pawned, as valuables in a complex ‘economy of material value’ (*Sachwerteökonomie*), were mostly clothes. Clothes, household objects like glass, metal (also tools), linens and furniture were instruments and symbols of value conservation, equal to money. These objects were considered as very valuable, since they could easily be turned into money in times of need and crisis.

Thus, pawnbroking of clothing was the preferred economic practice in cases of emergency for poor people. Clothes that were not redeemed were sold at auction, and thus entered the trade circle of second-hand clothes. The intertwining of the second-hand market and small loans and credit becomes very obvious and has been neglected as a highly interesting topic. Generally, most of the material goods were reused in one way or another. It is important to note—with Groebner—that the price of resources and the material was much higher than the price of work that created these objects. Work came at a very cheap price in the late medieval economy. Not allowed as pawned goods were unfinished products, food and dirty clothes.

Another finding of this study is that Jewish pawnbroking was only one option beside pawnbroking by Christians. Jewish economic activity slowly faded from the 1470s and ended at the end of the fifteenth century with the expulsion of the Jews by emperor Maximilian I on 21 August 1498. Simultaneously, Maximilian ordered the installation and foundation of public pawn shops called exchange banks in Nuremberg, to guarantee the supply of cheap credit for the poor.

Groebner deals with different cases of conflict that were dealt with in court, for instance, some induced by husbands who pawned the belongings of their spouses, or the delay in the payment of debts, which were sanctioned by the confiscation and garnishment of the debtors. He also mentions the ban from town or incarceration in the tower.

Movable belongings were thus the basic instruments of securing one’s economic survival. The women and men (brokers or *Käufel, Fürkäuferinnen*) working as second-hand dealers were also tasked as experts when it came to estimating the value of pawned objects at auctions (217). In the context of a social history of groups within a late medieval town, debts are considered here as part of a 'strategy of getting in possession' of valuable objects by creditors as well as the exploitation of the workforce within the workshop system/putting-out system.

These small loans also caused conflicts and court trials—according to the urban court records (*Libri Conservatorii*) from the end of the fifteenth century—which constitute the main corpus of source material for Nurnberg. Beside the Later Middle Ages as time of constant crisis, Groebner puts the strategies of survival of the 'poor' in the centre of his source interpretation. Besides, he focuses on themes like the workshop system/putting-out system, debt-chains, long-term debts and economic circumstances of the workmen and women.

Detailed and very down-to-earth questions presented here are those of how the small loans worked, what sorts of pawned goods were involved, and also which were the sanctions applied in case of dysfunction.

Reviewed Sample Study 54

Coin Hoards as Sources for the History of Money (SEBASTIAN STEINBACH)

Hagen-Jahnke, Ursula, and Reinhold Walburg. 1987. *Coin Hoards. The Example of Walle*. Frankfurt/Main: Deutsche Bundesbank.

Methods: coin hoard analysis, comparison, die analysis, metal analysis

Sources: Coins, coin hoards

The Hoard of Walle as an example of Money and Trade in late sixteenth-century Frisia.

The coin hoard of Walle—which today is a part of the town of Aurich in Northern Germany—was discovered on 18 May 1971 near an East Frisian farmhouse. Whether the hoard had once been hidden within an older building or outside the house cannot be decided with certainty: the predecessor of the present farm had been destroyed in 1864 by a fire (arson). At least one can say that the hoard had been hidden not far from the building. Nor can it be said who may have been the owner of the hoard in the sixteenth century, because information about the occupier of the house only exists from the year 1814 onwards. As can be seen easily, the analysis of written sources about the 'area' of the finding spot is as important as the analysis of the hoard and its content itself. The hoard consisted of 468 silver coins hidden in an earthenware vessel with a height of approximately 26 cm and a diameter of 20 cm at its widest point. The jug used to hide the coins was of simple working, lacking any decoration, and seemed to have been damaged before its recovery. Thus, it has been an object of daily-use which did no longer fulfil its original purpose and had therefore been used as a container for the hoard to be saved. Only one-third of the damaged pot was full of coins and it is no longer possible to say how the coins were stacked in the jug, in other words, if there was any kind of sorting performed by the owner in local and foreign or valuable and inferior denominations. The find also contained several more broken coins, stemming from lower denominations (small change) and could not be reassembled as complete objects. Gold and copper coins were not represented in the hoard, which exclusively consisted of silver coins. The objects of the hoard can be divided into different countries/territories and coinage authorities. As one can see (below), 153 pieces of the coins contained in the hoard were 'foreign' (non-Frisian) currency and 315 pieces East Frisian local money. In general, it encompasses a wide geographical area from Seville in Spain to Prague in Bohemia and from Lübeck to Milan in Italy with one coin also stemming from the mint of Mexiko in the New World. In total 102 pieces (21.79%) come from Spanish possessions on the Iberian Peninsula (11), the Netherlands (88), Italy (2) and the New World (1), which is not surprising considering the relatively small distance from Walle (Aurich) to the Spanish Netherlands.

To get more information about the period of time in which the hoards were built and hidden, we have to take a closer look at the single denominations and the times they were struck. The oldest coin is a Stuiver from Brabant (1492) and the youngest (*Schlussmünze*) a Flindrich from East Frisia (1585), so the hoard had a time-spread of 93 years, which is not unusual, there are hoards covering a time period of more than 200 years. A certain concentration can be seen within the coins from East Frisia in the years 1571 to 1585 and within the foreign coins (which had to travel over a longer distance and needed more circulation time) from 1556 to 1575. In total 87.4% of the coins originate from the time between 1561 and 1585. Most likely the hoard would have been buried between 1585 and 1590, for East Frisian Flindrichs from 1590 are lacking and as a common coin within the geographical region of the hiding place otherwise should have been present in the find.

The total hoard with a weight of 2926.49 g (precious metal weight: about 2242.41 g) might have had a calculated value of about 85–87 Reichstaler. Although the number of East Frisian coins (315/67.30%) is twice as large as the number of foreign coins (153/32.70%), the domestic currency presents only 40% of the entire value of the hoard, for the East Frisian part consist of pieces of small and medium value. In contrast, the foreign coins are mostly large silver denominations. A comparison of these two parts of the hoard revealed the following:

	Specimen	Gross/fine weight	Value in *Reichstaler*	Percentage
East Frisian coins	315	1032.62 g/639.93 g	24.63	28.54
Foreign coins	153	1893.87 g/1602.48 g	61.68	71.46
Total	468	2926.49 g/2242.41 g	86.31	100

The original purchasing power of the hoard is hard to determine for there is almost no information on prices for the time from 1580 to 1600 in East Frisia and valuations from other regions and times are hardly comparable. Also the exchange rates of foreign coins to East Frisian money are not always known and could vary remarkably even within short terms of time: a survey of coin valuation from the archives of Aurich for the period from 1563 to 1592 (the time in which our hoard was hidden) shows a valuation of the Reichstaler of 16 Schafs (= 32 Stuivers) in 1578 and of 24 Schaf (= 48 Stuivers) in 1592—meaning that the value increased by 40% within 14 years.

The question as to how the former owner of the hoard earned such an amount of money cannot be answered with certainty, but nearby Aurich was one of the most important centres for cattle trade in the North Sea. Also the war between Spain and the Netherlands forced a number of immigrants to move to Emden, which doubled its population between 1540 and 1570. All these partly well-established people needed to be fed and helped to increase the wealth of the region—maybe also that of the owner of the hidden money. They could have brought the large amount of Spanish money with them, which is presented in the hoard.

A die analysis of the coins also showed that the 2/15 Talers from 1579 and the Flindrichs of the years 1583–1585 were often die-linked (struck with the same dies within the same mint), which could mean that they belonged to only one payment of a larger sum. Between 1551 and 1575, the owner must have received a larger sum of foreign money—mainly from Spain and the Netherlands—while the East Frisian local money had been hoarded mainly between 1576 and 1585 and might stem from the normal circulation. So the distribution of the hoard fits with economic developments in the area of Emden from the 1540s to the 1570s, and it tells us that the local money seems to be taken out of the circulation of the actual valid coinage.

The hoard of Walle and its detailed analysis shows us all the different parts of economic and social knowledge which could be covered by a single concealment of coins not only from the sixteenth century. It also reveals the possibilities of quantitative and statistical methods such as die analysis, metrological and metallurgical investigations and numismatic cartography in connection with the evidence of the written sources for the history of money, economy and coinage. Unfortunately, not all hoards are analysed in such a detailed way, and only the comparison of different hoards from a certain region with different intentions and reasons can provide us with more detailed picture of the circulation and volume of money within special territories in a certain time period.

Reviewed Sample Study 55

Networks of Urban Credit in Basel (BENJAMIN HITZ)

Hitz, Benjamin. 2017. Schuldennetzwerke in der spätmittelalterlichen Stadt und ihrem Umland. Eine Stichprobe anhand von Basler Gerichtsquellen von 1497. In *Schweizerisches Jahrbuch für Wirtschafts– und Sozialgeschichte* 32: 101–132.

Methods: classification/types, digital mapping, network analysis

Sources: court records (urban), tax lists

The study is of interest because it applies methods of social network analysis to credit and debt relations in a late medieval urban context. It deals with civil court records of fifteenth-century Basel (see for Basel also Signori 2015). The study discussed here is a preliminary report on an ongoing project based on two samples of one year each. For the years 1497 and 1455, all credit relationships retrieved in the records of the so-called Schultheissengericht have been entered into a database. The court offered various procedures for debt recovery: apart from suing, creditors could register simple acknowledgements of debts or try to access debtor's (mobile or immobile) goods. The sample years have been chosen because of their chronological closeness to existing tax rolls, which allow additional information to be obtained about the individuals. Since the sample of 1455 is not yet fully prepared, what follows is based on the 1497 sample.

The research question is twofold. On the one hand, it asks for the structure and patterns of credit relations within an urban society and its hinterland, and on the other it questions the function of debts in this society. Are credits a kind of 'social grease' permitting the participation of the poorer people in an urban economy, or are they rather the expression of dependency and a hierarchical order? The network proved to be of limited density, because most individuals appear in court only once. This fact constrained the possibilities of network analysis.

Nonetheless, the analysis yielded some results. The network was held together by a few conspicuous people: some debtors who went bankrupt in the year in question, causing an abundance of creditors who all rushed to get their outstanding debts recorded. These people's ego-network could be analysed separately. But the circle of recurring creditors seems more interesting. As members of the city elite, they appear to be large-scale moneylenders, but this activity never seemed to be their sole (or main) activity. Those creditors did not only hold a central place in the network but also lived in a quite narrow neighbourhood in the commercial centre of the city, as some geographic information system (GIS) representations show. The debtors on the other hand were more scattered throughout the city, quite a few of them in the suburbs, where virtually no creditors were located. The analysis thus shows a striking hub-and-spoke effect. This is likewise reflected in the relations between people of different wealth levels: generally, the creditor was just as rich or richer. This is less surprising than the fact that the poorest citizens could also participate in the credit economy, mostly as debtors. They could more easily get access to credit when they were in a richer neighbourhood. While this shows their integration into the urban economy, they were more often exposed to confiscation of their goods. This proves that it is important to differentiate the analysis along the different types of legal procedures the creditors could choose to reclaim their debt.

This is true also for the credit relations that went beyond the city borders. There were proportionally more debtors in the city's rural hinterland, most of them subject to a procedure that was not much more than an acknowledgement of the debt including the promise of repayment within one month. On the other hand, creditors were more frequent proportionally to increasing distance from the city. They were often residents of bigger towns themselves and chose more obliging procedures. This variance shows different functions of the credit market and of debt litigation: Basel was a financial centre for its hinterland, providing credit to peasants who could hardly evade. The creditors from further away prove Basel's integration in commercial activity with a wider radius.

The evaluation of the network data consisted mainly in identifying important actors using centrality measures (mainly degree), the analysis of credit chains (i.e. looking for creditors who are debtors as well) and the analysis of aggregated network charts based on actors' attributes like sex, geographical origin, wealth or profession, representing the density of credit relations between and within the categories. In order to differentiate between the different available legal procedures, sub-networks were set up and analysed separately. The localisation of people in the city (thanks to tax rolls) and in places outside Basel allowed for spatial representations of the networks using GIS.

The study could not link the identified credit relations to social relations like kinship or neighbourhood; on the contrary, everything speaks in favour of dominantly economic relations that were not proceeded by any observable connection of a different kind. This does not call into question the use of social network analysis, but it confirms the character of debts in litigation observed by Signori (2015, 45). All in all, aspects of a hierarchically structured credit market with a clearly dominant creditor (see, e.g., Groebner 1993, 202, or Schuster 2008, 42) prevail, but this may be due to the fact that bringing a case to court was an option only when no social relationships existed. Although the results do not contradict the cited studies, social network analyses can add another perspective on patterns of credit relations in general and on patterns of the use of civil justice in particular, thus broadening our understanding of an important aspect of urban economy.

Reviewed Sample Study 56

Pawns as Objects in Credit Transaction (TANJA SKAMBRAKS)

Hoheisel, Peter. 1996. Zur jüdischen Pfandleihe im spätmittelalterlichen Göttingen. Ein Verzeichnis der vor dem Göttinger Ratsgericht von 1443 bis 1460 aufgebotenen Pfänder. *Göttinger Jahrbuch* 44: 107–119.

Methods: comparison, microhistory, source presentation/edition

Sources: court records (urban), statutes

Household goods, clothing and jewellery played a crucial role in small credit transactions. They were literally 'value holders' (Smail 2016; Groebner 1993), enabling the poorer strata of society to participate in market transactions, be it as an investment in new tools or seeds, or for everyday consumption of foodstuffs and so on. Interestingly, pawn lists from Germany (and also Italy) show that pawnbroking was a practice also among the richer people. Hoheisel's article deals with a neglected and rare type of source surviving from urban courts: bid lists dating from 1443 until 1460, announcing the sale of unredeemed pawned objects. From the 82 lists he found in the City Archive of Göttingen, he provides transcriptions for two of these manuals aimed for short-term use. He contextualises the findings regarding the development of late medieval urban administration techniques and the functioning of the council court by parallel analysis of city statutes from the early fifteenth century. From this it follows that small credit in late medieval Göttingen, as most likely in other German towns until the second half of the fifteenth century, was in the hands of Jewish moneylenders. Eleven to fourteen families (1.5% of the city's population) lived in Göttingen between 1370 and 1460. Jewish moneylenders took a weekly interest of 6 pence per mark, being equivalent to 54% interest rate per annum.

The moneylender had to take hold of the pawned objects publicly (in daylight) under the scrutiny of two witnesses. Preparing unredeemed objects for sale was a strictly organised and supervised act. The lender first had to hand in the bid list to the city court (twice), providing two witnesses and one intercessor—this was to prove that no stolen goods were handled. The name of the debtor remained anonymous. Shortly before the auction, one council messenger had to walk from door to door and outside the town (*husen to husen und vor de dore*) to announce the sale. Forbidden objects were, according to the statutes, blood-stained clothes, liturgical objects and animals.

Thus, the lists count numerous pieces of clothing—mostly winter clothes, like hoods, coats or overcoats, some jewellery and household goods, like brewing kettles. These had to weigh at least eight pounds and should only be pawned for eight weeks. The lists also give the names of the debtors and witnesses, of whom most were craftsmen. Some members of the council as well as people from villages around Göttingen brought their objects to the Jewish moneylenders too. Most strikingly, two dukes of Braunschweig (Frederick and William the Younger) also were among the clients, pawning jewellery, pearls, velvet, spurs and so on via their agents.

Concluding that the need for legal security led to the development of these administrative procedures, Hoheisel puts the most promising sources concerning the material culture of debt and the 'social life of things' into a rather traditional context of the study of legal procedures in late medieval towns by linking them to normative sources like statutes. Although the analytical level of this study remains simple and descriptive, the author provides valuable and stimulating access to a rare and mostly unstudied kind of source. Thus, one essential task of medieval historians, namely the presentation of source material, is realised.

For the history of small credit and the material culture of credit as one important strand of research, these kinds of reviewed sample studies are of utmost importance. The micro-perspective on one town at a certain point in time enables historians to catch a glimpse of the practices involved in the trade of valuable objects as well as the solutions and regulations of wider problems connected to small credit. Regarding the objects pawned, it becomes possible to compare results from different regions of

Europe in which small credit was a ubiquitous institution in the fifteenth century. In short, poorer (and richer) people everywhere seemed to lend objects that they didn't urgently need, but that nevertheless possessed a huge value since they could be transferred into cash at any time.

Reviewed Sample Study 57

Interest Rates and Usury (TANJA SKAMBRAKS)

Homer, Sidney, and Richard Sylla. 1963. *A History of Interest Rates*. New Brunswick: Rutgers University Press.

Methods: classification/types, comparison, descriptive statistics

Sources: annuities, databases, letters of exchange, theological tracts and sermons

This classical and still very frequently cited study by Homer and Sylla (originally published in 1963) deals with the question of long-term discursive and quantitative development of interest rates from antiquity to the present of the authors by relying on and summarising findings of well-known previous studies (Lopez 1976, 1986; De Roover 1968). The book provides and analyses secondary data; it is not based on a certain corpus of source material. Hence, this study is rather a compilation of older research results, lacking a genuine method and source base.

Generally speaking, the authors conclude that the rates of interest for diverse loans were declining from the twelfth to the seventeenth century from roughly 10–20% to approximately 6–10% for short-term commercial loans in this time span. For short deposits with merchant bankers or banks, the interest rate declined from 10–20% to 5–6%, for instance in Italy. The trend of falling interest rates over the century is also visible regarding long-term loans. Here the numbers fell less dramatically from 8–10% to 4–10%, for instance in the Spanish Netherlands.

Another finding is that credit was an effective political device, visible, for instance, in census annuities and long-term loans by cities with their citizens. Cities and city-states actively tried to avoid usury and drew heavily on their inhabitants for loans to finance their military or political needs. The role of kings, queens and the popes in credit history must be considered rather destructive, since they were in most cases relying on floating debts which resulted in defaults and consequently in the ruin of many bankers and banking corporations. In this status-based society up to industrialisation, there was no such thing as state credit, although the authors identify many forms of medieval and early modern credit transactions and banking techniques as forerunners of modern credit techniques. Nevertheless, they qualify this narrative of a premodern and proto-capitalist financial system (135).

Emphasis is also put on the leading role of Italy throughout the centuries in the money market of the Middle Ages until the seventeenth century. Only then did national boundaries emerge, thus ending the phase of an international and widely linked financial market based on local economies and politics.

In the relevant chapter on medieval and Renaissance Europe (meaning Spain, Italy, the Spanish Netherlands, the Dutch Republic, France and England as well as Germany), the authors provide an overview of the usury doctrine pointing to the changing habit of church law concerning interest. Limits and exceptions were common, leading to a "gradual evolution and modification of the usury doctrine during the thirteenth to the fifteenth centuries" connected with "new credit forms that eventually obtained general and ecclesiastic acceptance" (70). This has become a classical hypothesis for medieval credit history. They also state that risk was "generally not considered a legal ground for accepting interest rates or profit on a loan". Consequently, people dealing in foreign exchange strove to avoid being accused of usury by concealed or incorporated interest in commercial credit (see reviewed sample study on Bell et al. 2017).

By compilation and classification of second-hand data from former studies, the authors categorise medieval credit transactions into types between the twelfth and the seventeenth centuries, differentiating between the following types of interest-bearing loans: loans to princes, short commercial loans (visible in bills of exchange), short deposits and long-term loans, like census annuities, mortgages and perpetual debts of cities (the overall and very general results are summarised in tables at the end of the chapter, 136–139). For each century, there is a short summary of the most important historical and social developments and background, followed by examples of interest rates classified by types of credit and later (seventeenth century) by country. The findings are very scarce for the twelfth century but get more abundant over the course of the time.

There are two major problems preventing a complete picture of the height and development of real interest rates: one is their volatility—this being the result of political instability, wars, catastrophes like the plague and so on. The second is the scarcity and incompleteness of source material over the centuries, which of course only in the fewest cases, like the Casa di San Giorgio in Genua or Venetian financial records, allows for deeper as well as broader insights into the long-term development. Otherwise the tables and interpretation of this study must rely on scattered information, both geographically and chronically (self-critique on 140). In spite of these drawbacks, the authors use a bulk of available data from older studies like De Roover (1948), Cipolla (1956), Pirenne (1937) and Noonan (1957) to—at least—show trends of the interest rates.

The authors do not work on edited or archival source material. Instead, they use secondary data from a wide range of older studies, which enables a broad overview and a macro-perspective on the development of interest rates between the twelfth and the seventeenth centuries. Consequently, they rather outline some important trends in financial history in the longue dureé. Knowing these trends, it remains difficult to tackle the question of the reasons for this decline on such a broad scale. The summary at the end of the chapter provides some more general statements on the credit systems of the analysed time.

Reviewed Sample Study 58

Rural Credit: Agistment (TANJA SKAMBRAKS)

Rippmann, Dorothee. 1990. Die Umland-Beziehungen des Kaufmanns Ulrich Meltinger. In *Bauern und Städter: Stadt-Land-Beziehungen im 15. Jahrhundert. Das Beispiel Basel, unter besonderer Berücksichtigung der Nahmarktbeziehungen und der sozialen Verhältnisse im Umland*, 180–237. Basel: Helbing und Lichtenhahn.

Methods: classification/types, microhistory, source interpretation/hermeneutics

Sources: contracts, merchants' handbooks

This study focuses on the under-researched topic of agistment (Viehverstellung) as a form of rural credit between the Basel-based trader Ulrich Meltinger and 20 peasant families around the town during the 1470s and 1480s. Using Meltingers' merchant book (Handlungsbuch), a personal diary providing an overview of his business transactions, Rippmann shows the close connection of urban citizens as producers, investors and creditors with the surrounding countryside and at the same time provides a concrete definition of the term. Agistments were a common form of livestock lease all over Europe, especially in France, Italy, Switzerland and parts of Germany. Horses, cattle, pigs, sheep and bees were leased out by one investor, the so-called Versteller, to the farmer who raised and fed the livestock for a certain amount of rent.

By providing valuable insights into the differentiated role of one trader as producer and creditor as well as investor, we learn about essential forms of credit like the putting-out system (Verlagssystem) and agistment based on informal credit structures that were strongly connected to trade and production of food and clothing. The debtors very often experienced economic shortages several times a year: during the first two or three months of the year, around Easter and also in the summer, shortly before the harvest. This continuous need for support forced them to remain in a network of informal and more formal credit relations with well-off town inhabitants, like Meltinger. He provided small sums of credit (between ½ and 1 lb.) to several peasants and rural craftsmen within a radius of 10 km around Basel, thus financing three types of peasants' expenses: (1). shortages of fodder and grain in years of bad harvests, (2). their consumption on urban markets and (3). the payment of tithes and rents.

The *Handlungsbuch*, a rich but singular source, justifies the microperspective of source interpretation as the method of this study. Rippmann calls her method "history of everyday life" (237), this being a very nebulous term, rather than a method at all.

By singling out one particular book by one particular person, Rippmann's method can be qualified as micro-history. The way she tackles the source is explorative and descriptive at the same time. Aiming at a definition of the phenomenon 'agistment', she collects text parts offering a clue on this practice.

The contracts of agistment—in the case of Meltinger they were not written down—fixed an investment and the common holding of cattle as well as the shared gain for calves or oxen birthed by the cow and then sold. In cases of loss of a calf or cow the farmer had to compensate the loss, which of course put the risk on the side of the lessee. One possible form of loan in disguise here was the payable rent. Furthermore, many investors credited additional fodder and money to feed the animals. Another was the credit provided for the buying of 'half a cow' by the farmer, in case of common purchase of livestock.

The practice of agistment vanished in the sixteenth and seventeenth centuries in most parts of Europe, but in some parts of Southern Germany (Black Forest) it prevailed until the eighteenth century. It also proves the very close intertwining of rural production and urban market consumption. Urban demand thus regulated and formed the rural modes of productivity and the forms of finance, at least in the close surroundings.

This reviewed sample study contributes in basic form to the research on rural and small credit, a topic that has been neglected due to the indirectness of information in the sources as well as general lack of interest in the rural sphere in recent decades. Only more meticulous work on a micro-basis can accumulate more information that also helps to link singular and restricted findings to broader contexts like informal credit systems, petty consumption and trade, as well as rural production.

Reviewed Sample Study 59

Money—Manipulation and Crisis: Inflation and Deflation (SEBASTIAN STEINBACH)

Rössner, Philipp Robinson. 2012. *Deflation – Devaluation – Rebellion. Geld im Zeitalter der Reformation*. Stuttgart: Steiner.

Methods: source interpretation/hermeneutics, comparison

Sources: contracts, merchants' books, minting ordinances, trade accounts

In his voluminous study of more than 660 pages (sources and literature not included), Rössner analyses the time of the (Protestant) Reformation—which is uncommonly defined by him as the period between 1470 and 1530/1540—and in which way money and coins of poor quality influenced the restless and rebellious times at the beginning of the sixteenth century, a period of social, religious and economic change. In five chapters (three main chapters) he follows the terms of deflation (Chapter II, 97–310), devaluation (Chapter III, 311–483) and rebellion (Chapter IV, 485–631), succeeded by a brief summary (Chapter V, 663–664). In fact, the study is focused on 'money' as a reason for social uprising and presupposes the presence of a poor and fragmented currency system during the premodern era (19).

Three central aspects of his work are therefore the coin debasement, the devaluation of currencies and the social riots during this phase. Rössner investigates the circulation of silver as the standard precious metal for coins and finds a constant decline of the overall silver supply, although the mining production (i.e. in Saxony or Bohemia) was raised as a result of technical inventions and large quantities of silver came in from South America. This shortage of material (silver), causing a shortage in money supply, led to a decline of the price level (deflation) and reduction of the precious metal content of the coins (debasement). In this case, Rössner seems to contradict older theories (Abel 1978), which stressed rather an increase of the price level (inflation) due to the massive inflow of fresh silver from the 'New World'. The solution for this discrepancy of economic theories for Rössner at the end lies in the division of the examined period in two phases: a more inflationary-characterised time (1470–1500) with an abundance of silver and a more deflationary-appearing time (1500–1530) with a shortage of silver, caused by an outflow of the material (about 70–80% of the production) to Northern and Eastern Europe, provoked by a negative trade balance and not compensated by the inflow of the American silver mines.

Due to his specified developments in monetary economy, Rössner differentiates between two groups of coins/currencies that arose: stable and valuable coins (i.e. Taler and Gulden), in which big economic transactions were paid as well as taxes or tithes; and inferior and fluctuating coins (i.e. Pfennige), which were used for daily payments. Two separate economies for two social classes came into being, for political authorities and wealthy merchants had much easier access to stable and valuable money. The instability of small change created an instability in the market and threatened the income for the common people in case of the decline of the price level (deflation) and the fluctuating exchange rates (debasement). In contrast to this, merchants could compensate this with their payments in stable currencies for higher quantities of goods. This situation motivated popular riots such as the Bauernkriege (1524–1526), and explains why Luther's thoughts about financial practice were widely recognised by the common people. When this deterioration also reached the owing classes, the rebellions had their politically and militarily trained leaders. The 'dysfunction of money' (485) (a term loaned from the medieval money theorist Nicolas von Oresme) led to social dysfunction such as poverty and rebellion. Considering all this, Rössner's study is an impressive compilation of somewhat local (i.e. Saxony and the Taler), national (policy of the Holy Roman Empire) and global (worldwide silver trade) studies about the connection of social and religious rebellions with political and economic crisis in the sixteenth century—even though it may not be surprising that economic manipulation such as coin debasement causes peoples' uprising. At least the economic sphere is an important, but not the only reason for the revolts of this time and the complex system of influence between different (economic, social, religious and political) factors is sometimes difficult to see through. Naturally Rössner also depends on his (written) sources: his geographical sphere of examination is concentrated on middle and upper Germany. Most of all the rural sphere—which is a central aspect of his argumentation—is only reflected by the tradition of the (also minting) authorities and not by the suffering peasantry itself. This is one reason why he examines especially the urban trade and finance markets of Frankfort, Nuremberg and Venice.

And although Rössner states that large parts of economic activities cannot be deciphered from the sources themselves (71), a major realisation of the work is that the types of coins mentioned in contracts or invoices may not have been the form of coins used for the actual payment itself. A fact that even sheds new light on the interpretation of coin hoards as intentional collected ensembles. But ultimately the most important outcome of his work lies in its connection of numismatics, money and social history. An example which should be transferred to other eras such as the ancient and medieval period as well, when money played a sometimes more important cultural and social than economic role.

Reviewed Sample Study 60

Credit Market on the Frankfurt Fairs (STEPHAN KÖHLER)

Rothmann, Michael. 1998. *Die Frankfurter Messen im Mittelalter.* Stuttgart: Steiner.

Methods: classification/types, comparison, micro-exemplary method

Sources: court records (urban), pawn registers

With his book about the fairs in Frankfurt/Main, Rothmann filled a gap in medieval economic history. Whereas most publications about medieval fairs concentrate on the circulation of wares and goods, Rothmann put the focus of his examination on the financial aspects of the fairs (Rothmann 1998, 19). Instead of simply describing the medieval Frankfurt fairs as a marketplace of exchange, Rothmann depicted the fairs as a complete urban system and as "an economic and social unit" (*als wirtschaftliches und soziales Ganzes*; Rothmann 1998, 23). This means that different groups of persons (city council, merchants, princes, etc.), institutions, customs duties, places, imperial and foreign policy, information and messenger systems (Boten) played an important role. However, the centre and heart of this study is the examination of the money and credit settlements at the fairs.

In doing so Rothmann decided to pay less attention to the history of trade relations and transfer of goods (i.e. the important wine trade)—which both have already been well researched—but instead chose a different methodological approach: the examination of the fairs through understanding their financial dimension in the whole of Europe. One of his main arguments is that detailed knowledge about the Frankfurt payment calendar (Frankfurter Termin) is of special significance for the comprehension not just of the Frankfurt fairs themselves but also of the most important German and European economic regions of the time. The description of the importance of the Frankfurt fairs for payment and credit settlements will be shown through Rothmann's analysis of the payment arrangements of several towns at the fairs (Chap. 4; Rothmann 1998, 329–422).

Credit was an important prerequisite for the activities of trade, and there were several opportunities to create artificial money at the fairs: credit on goods with a promise of later payment, promissory notes, pawnshops, mortgage loans, rents or letters of exchange. At the beginning was the credit on wares with a later payment. This cashless form of payment was known as *Skontraktion* or—to put it in the terms of the author—to pay with a closed bag. The regularity of the fairs helped them to become the meeting points for payment and credit arrangements. The fairs thus also became part of the regional and supra-regional payment calendar.

The main sources for the Frankfurt fairs are the so-called Insatzbücher (pawn registers) and Schöffengerichtsbücher (court records from a court of lay assessors) from the city of Frankfurt, of which the Schöffengerichtsbücher are mostly lost. However, official sources like court books or pawn books don't allow a realistic view of the past economy since mostly non-performing loans were written down in these sources, neglecting the proper usual business. Therefore, historians have to look beyond these sources (Quellenhorizont) and use external sources—and this is exactly what Rothmann did (Rothmann 1998, 360). The Insatzbücher already show a spatial extension of importance of the Frankfurt fairs. Whereas in the oldest volume of the Insatzbücher (1328–1340) relations to Babenhausen, Cologne, Leuven, Mainz, Mechelen, Montabaur, Siegen and Strasbourg are recorded, the following two volumes (1341–1377 and 1378–1422) mention altogether 48 cities, including major commercial centres such as Bruges, Konstanz, Lubeck, Hannover, Milan and Regensburg. However, these sources only tell us a partial story, namely the bad credit operations that were secured at a public court.

Since the Schöffengerichtsbücher from Frankfurt are mostly lost, Rothmann chose a comparative approach (comparison) for his chapter about the credit market. This way he could describe the importance of the Frankfurt Fairs for credit operations despite the absence of sources from Frankfurt itself. Therefore, Rothmann analysed comparable external sources, which depict the role of the Frankfurt even more clearly as financial centre. He chose the cities of Basel, Konstanz, Nördlingen, Dinkelsbühl, Cologne and Antwerp as particular examples to study the spatial and temporal distribution of the money and credit settlements of different regions. Rothmann chose important trade cities with exceptionally good source material.

The case of the financial activities of Konstanz will serve here as an example (Rothmann 1998, 380–398). The Ammanngerichtsbuch, a court record book, survived in Konstanz for the years 1423–1434 with 673 entries. Since aside from court records it also contains ordinary commodity and money transactions, meaning the ordinary course of business in contrast to court cases solely about foul credits and losses, it represents a cross section of the economic activities of Konstanz in the mentioned years. Rothmann quantified all external payments recorded in Konstanz in the Ammtmanngerichtsbuch and thus showed the importance of the Frankfurt fairs for the regional economy of Konstanz and its Hinterland (cf. Table 8.1).

Table 8.1 Payments and aggregate amount of external payments in Konstanz 1423–1434

Location of payment	Amount of payments	Aggregate amount	Percentage
Frankfurt	61	19,241 ½ fl.	49.80%
Nördlingen	14	6901 fl.	17.86%
Venice	8	10,323 fl.	26.71%
Biberach	4	374 fl.	0.97%
Zurzach	4	394 ½ fl.	1.02%
Geneve	3	307 ½ fl.	0.79%
Reutlingen	3	368 fl.	0.95%
Ravensburg	2	Only wares	/
Lindau	2	243 fl.	0.63%
Freiburg i. Br.	1	21 fl.	0.05%
Zürich	2	194 fl.	0.50%
Augsburg	1	Only wares	/
Radolfzell	1	Only wares	/
Ehingen	1	34 fl.	0.09%
Lichtenstaig	1	34 fl.	0.09%
Feldkirch	1	6 fl.	0.02%
Rottweil	1	Only wares	/
St. Gallen	1	57 fl.	0.15%
Überlingen	1	145 fl.	0.37%
Total amount	113	38,643 ½ fl.	100%

Source: Rothmann (1998, 383), Table 34

As a result, Rothmann proved the significance of the Frankfurt fairs not only for the international long-distance trade of Konstanz but also as payment term for the regional business of Konstanz itself. The Frankfurt fairs were mentioned 61 times as scheduled date or place of payment out of overall 673 entries in the court records, which amounts to nearly 9% of all recorded payments. The share of the Frankfurt fairs in all external payments' locations registered in Konstanz represents nearly 54%. In supra-national payment transactions, not counting the cities of the same economic region of Konstanz like Zurzach or Nördlingen, the Frankfurt fairs even reached a remarkable 78% share of all conducted transactions. Similar observations can be made using the listed payment amounts in the records of Konstanz.

By studying different sources from outside of Frankfurt, Rothmann, through comparison of source materials from different cities, creates an external perspective with a wider range of information about the importance of the fairs. He provides well-founded evidence about an existing stock, ware, money exchange and credit market in Germany that was, both geographically and financially, expanding during the fifteenth century and connected areas in the North and in the South. The example of Konstanz shows that a deeper understanding of the functioning of late medieval fairs and interwoven credit arrangements can only succeed by comparing both the internal and external sources of the fairs. Frankfurt was known as an important medieval fair town, but the meaning of the Frankfurt fairs for payment arrangements between Konstanz and its surrounding economic region was far more important than was thought, as Rothmann could show with his investigation of external sources (cf. Rothmann 2010).

Reviewed Sample Study 61

Annuity Markets: The Frankfurt Fairs as Central Places (ANGELA HUANG)

Rothmann, Michael. 1998. *Die Frankfurter Messen im Mittelalter.* Stuttgart: Steiner, chapter VI, 5: Der Rentenmarkt.

Methods: classification/types, comparison, micro-exemplary method
Sources: annuities, contracts, urban accounts

This reviewed sample study deals with two central phenomena of the premodern economy and society: fairs and annuities—and their relationship. Annuities with their importance for public debt and credit markets have received some attention in the debates on state formation and market integration.

Fairs are top-level open-access markets in premodern exchange with a distinctive legal framework, promoting large-scale bulk trade. In his monograph on the Frankfurt/Main fairs, Rothmann looks particularly into their function as a money/credit market. Chapter VI, 5 (423–478) reconstructs the Frankfurt fairs as markets for public debt, where particularly towns sought credit, annuities being the most important credit instrument in the late medieval Holy Roman Empire and the main means for communes to raise extraordinary funds.

Rothmann's exploratory study makes an important contribution to the study of annuity markets and the mobility of capital by combining scattered and unpublished evidence. He shows that fairs like Frankfurt mediated between buyers and annuity-selling towns beyond the local annuity market. They were a matchmaking institution for public debt and foreign private capital. Particularly payments of annuities took place here, but also annuity sales and redemptions. Furthermore, cases of default were negotiated here. The Frankfurt fairs by and large remained open markets even for highly indebted communes and thus central for their functioning. The data also gives insights into the geographical extent of credit relations through annuities.

Methodologically, researching external relations of markets and particularly the role of central places is a challenge as data must not only be puzzled together, but first and foremost found. The analysis of the Frankfurt fairs as an annuity market is part of a larger study, necessarily limiting the scope of the analysis. A complete or even comprehensive analysis of the role of the Frankfurt fairs in the selling and administration of urban debt would be next to impossible even in a stand-alone study, given that much material has not yet been analysed, let alone published. Consequently, the sub-study needs to restrict itself considerably in its design. Rothmann's analysis employs archival data from only a few selected annuity markets (towns selling annuities), supplemented by existing research on these and other annuity markets. As the spatial aspect is central to his study, both regional and supra-regional annuity markets are analysed in their relation to the Frankfurt fairs. The cases can be grouped into three types of annuity markets/capital seekers: (1) Wetzlar (mainly fourteenth century.) and Mainz (1350s–1450s) as heavily indebted towns, both within the region that Frankfurt was a part of; (2) Nördlingen (fifteenth century), Straßburg (fourteenth to sixteenth centuries) and Basel (fifteenth century) as 'healthier' annuity markets, over 200 km away from Frankfurt; (3) and the Counts of Wertheim (that we will not look into), also within the region, representing nobility.

The selected studies provide limited evidence on the interaction of those markets with the Frankfurt fairs; combined in a comparative approach, however, they give a rich account of the Frankfurt fairs as a central market for annuities.

The data is analysed both quantitatively and qualitatively. The quantitative analysis classifies the number of documented contracts, estimates the size of debt and assesses the role of foreign capital and the spatial distribution of foreign buyers. For each study, tables list the contracts depicting relationships with the Frankfurt fairs. Such tables make the data accessible for further studies. The qualitative analysis highlights individual transactions or negotiations in case of default that give unique insight into the interactions of the annuity-selling towns with their mainly private buyers via the Frankfurt fairs. Such a source interpretation of small cases allows a first assessment and could be enlarged and refined in a larger study.

The choice of second-hand data is largely motivated by the availability of data. Most data stems from the archives' inventories on urban debt—a necessary restriction to make the analysis of archival material manageable. The study makes use of diverse evidence, instead of using one type of data, for example, annuity letters. Rothmann employs annuity letters documented in different materials and other, at times fragmented, administrative sources, such as payment agreements and receipts and settlements.

Naturally, the informative value of the data differs from place to place. At the heart of the Wetzlar case is a ledger for payouts, sorted by due date with 61 annuity contracts, whereas the analysis of Mainz rests on fragmented data both from Frankfurt (annuity ledgers on Mainz buyers of Frankfurt annuities with payouts at the Frankfurt fairs) and Mainz (amongst others urban accounts) and additional observations from the study of other annuity markets, such as a letter on an Augsburg creditor of Mainz who had bought a Mainz annuity in Frankfurt and received payments there—a chance find rather than information that we can systematically track. This diverse and insular data only allows a snapshot of the external relations of the annuity market of Mainz—also meaning that the Mainz data benefits from a contextualisation with other annuity markets. Basel on the other hand is a well-studied annuity market, thanks to the edition of its urban accounts until 1535 (Harms 1909–1913) and the recent digital edition of the later period (1535–1610) that allow a continuous study of annuity sales and payouts. The archives of Frankfurt supplement these cases and provide the only data on Nördlingen for the year 1449/50, when the town actively acquired capital from foreign buyers in Frankfurt.

It should finally be mentioned that for a study like this, looking into market relations formed by individual contracts, the provenance and density of the material as well as local cultures of administration bring a bias to the data—it is not a given that the materials can be compared or combined. Whilst the decentralised and disconnected evidence allows us to explore the functioning of the Frankfurt fairs as a credit market, we will never be able to judge the relationship between the markets with a high degree of certainty.

Reviewed Sample Study 62

Jewish Moneylenders (CHRISTIAN SCHOLL)

Scholl, Christian. 2012. *Die Judengemeinde der Reichsstadt Ulm im späten Mittelalter. Innerjüdische Verhältnisse und christlich-jüdische Beziehungen in süddeutschen Zusammenhängen.* Hannover: Hahnsche Buchhandlung, chapter 2.1.2: Jüdische “Hochfinanz” im 14. Jahrhundert: Jäcklin und sein Umfeld, 207–229.

Methods: comparison, prosopographic analysis, source interpretation/hermeneutics

Sources: mortgage notes, privileges for Jews

Jewish financers were an indispensable part of the medieval economy. In many parts of Western and Southern Europe, Jews were important because as experts in money and credit transactions, they were capable of overcoming the shortage of liquid money, which was a general feature of the medieval economy. Scarcity of cash was especially prominent in the cities, where trade or mercantile production would hardly have been possible without the opportunity of getting money by credit, which explains why most Jewish moneylenders lived in cities, where the Jews were organised in autonomous communities.

Numerous Jewish communities of the medieval empire and their economic significance were analysed by a series of PhD theses supervised by Alfred Haverkamp in Trier (so-called School of Trier). One of these communities was situated in the Imperial city of Ulm, this was one of the largest and most important communities in Southern Germany. This community had reached its economic peak in the second half of the fourteenth century, when the city council depended economically and politically on credits provided by Jewish financers. Among these financers was a Jew called Jäcklin, who serves as a perfect example of how Jewish financers were doing business in the Later Middle Ages.

Jäcklin was head of a vast family business that was active in numerous cities in Southern Germany, among them Ulm, Constance, Nördlingen, Nuremberg, Rothenburg ob der Tauber, Zurich, Augsburg and Strasbourg. The branches of the business were run either by Jäcklin himself or by his sons, sons-in-law and brothers-in-law. This fact underlines the importance of the family as the most significant institution of Jewish moneylending in the Middle Ages. Jäcklin's customers were noblemen such as the dukes of Teck and Bavaria, city councils such as those of Ulm and Augsburg, and finally individual, wealthy citizens from cities all over Southern Germany.

Dealing with Jäcklin's business activities gives insight into the entanglement of economic and political power in the Later Middle Ages; after all, Jäcklin was so wealthy that he exerted influence on the politics of his time. The loans he granted to the city council of Ulm, for example, were used to finance the city's armament against Emperor Charles IV. As a consequence, Jäcklin was placed under the Imperial ban in 1376/77, when Ulm and other Swabian cities were waging war against the Emperor. Furthermore, Jäcklin supported the city's territorial ambitions by granting loans to impoverished noblemen endowed with possessions near Ulm so that these possessions fell to the city of Ulm when the debtors could not pay back their loans. Thus, Jäcklin not only exemplifies the close relationship between financial and political power in the Late Middle Ages but also demonstrates to what degree Christian authorities—in his case the city council of Ulm—could benefit from wealthy Jewish moneylenders, both economically and politically.

Like most other studies stemming from the 'School of Trier', Scholl's work focuses on a specific area (the city of Ulm and its surroundings) and systematically gathers and hermeneutically interprets the source material concerning the Jews living there. The chapter on Jäcklin follows a prosopographic approach: Scholl gathered all sources on Jäcklin and thus reconstructed both Jäcklin's family background and business relations, that is, with whom Jäcklin was doing business. On the one hand, there were rich Jews, both relatives and non-relatives, from Ulm and from elsewhere, who cooperated with Jäcklin in *consortia*. The reason why Jäcklin and others cooperated in *consortia* is that this type of business not only made it possible to raise money for large credits—raising liquid money was one of the central tasks of Jewish financers—it also minimised the risk when credits were not paid back, which increasingly occurred in the Late Middle Ages. On the other hand, the prosopographic analysis gave information on Jäcklin's Christian clients, for example, the height of their loans, the reasons why they borrowed money and which social class they belonged to. Comparing Jäcklin's business to the economic activities of other Jews at that time, it becomes evident that Jäcklin was one of the wealthiest moneylenders in 1370 and 1380 Germany.

Most information on Jäcklin is based on the mortgage loans issued by Jäcklin's debtors. This informs us about the sums the debtors owed to Jäcklin, the conditions according to which they had to pay back their debts and what happened if they could not do so. Furthermore, there are receipts issued by Jäcklin and his partners in which they confirmed to their clients that they had paid back their loans or parts of them. The sources concerning Jäcklin's economic activities show how complex business relations at that time could be; after all, many of these activities involved numerous people from many different areas. For example, one receipt mentions no less than five people living in different cities, among them Strasbourg and Nuremberg, who received payments of interest by a Christian client living in Ulm.

The analysis of Jäcklin's business activities demonstrates that there were wealthy Jewish moneylenders who were giving out loans of thousands of pounds or guilders even after the pogroms of the Black Death. Several researchers of the past held the opinion that after 1350, Jews were only active as small pawnbrokers because they became impoverished after the pogroms. A moneylender like Jäcklin, however, had acquired enormous wealth even after 1350 and he could use his economic power to play an important role in politics. Along with other regional studies from Trier, the study informs about the Jewish—Christian relations in the medieval empire, which were not always characterised by exclusion and violence, and about the economic significance of Jewish moneylenders in the Late Middle Ages.

Reviewed Sample Study 63

Urban Credit Networks (TANJA SKAMBRAKS)

Signori, Gabriela. 2015. *Schuldenwirtschaft. Konsumenten- und Hypothekarkredite im spätmittelalterlichen Basel*. Konstanz: UVK.

Methods: microhistory, network analysis, source interpretation/hermeneutics

Sources: contracts, court records (urban)

In some cities, like Basel, sources stemming from voluntary jurisdiction show a wide variety of credit relationships based on small loans. The book by Signori (2015) is a micro-history on consumer credit and mortgages as well as on interpersonal trust versus trust in the system represented by courts that were supposed to guarantee the functionality of the credit transactions by means of written contracts (system of books).

By documenting conflicts emerging in these transactions, local courts in Basel produced different types of (unprinted) sources (see source-keyword on urban court records). They show a variety of means, mostly against debtors in the case of failure of payment and so on.

In contrast to studies like Muldrew (1998), Signori states that the actions of actors in credit transactions were mostly motivated by mistrust—therefore the willingness to control and prevent with the help of urban institutions. Thus, both sides laid out the sanctions in case of failure in advance, especially in favour of the creditors: ban from the city, confiscation and compulsory auctions of personal belongings (*Frönung*)—illustrating a generally rather bad payment morale.

According to this study, most credits were provided by relatives and neighbours or members of the same profession or *milieu*; economic actors knew each other well in most cases. Women and monasteries also acted as debtors and creditors. Married women were as liable as their husbands in court. In many cases creditors acted generously, postponing payment deadlines or allowing for repayment in instalments. Towards the end of the fifteenth century, the list of debtors became longer and the register of debts more and more detailed, thus pointing to a rising need for institutional control and formalisation of credit transactions.

There was a close intertwining of credit and property dealing; houses were used as pawns as well as objects of buying and selling at the same time. Cities like Basel had a vivid real estate market characterised by a close network of property-secured credit and manorial dependencies. In most cases, poorer buyers of real estate had to pay not only for the mortgage including interest but also the manorial obligations (*census*), thus creating a strong economic dependence of the poor on their creditors and their landlords, who were often the same person or institution. Hence, the credit relation created and enforced social asymmetries. Even more, trust and flexibility seem to have played a crucial role in overcoming these social tensions. This study proves the fruitfulness of a strictly local approach to a micro-system of credit relations as interpersonal relations based on rich source material from local archives, which is still only partly analysed. Studies like this one make sense by adding a concreteness to more discourse-oriented works like those of Fontaine and Graeber.

Reviewed Sample Study 64

State-Building and Credit (HIRAM KÜMPER)

Stasavage, David. 2011. *States of Credit: Size, Power, and the Development of European Polities.* Princeton: Princeton University Press.

Methods: comparison, descriptive statistics

Sources: databases

In this much cited and discussed study Stasavage follows one central claim: medieval and early modern political bodies depended not so much on military success, but rather on the solvency and commitments of their creditors. While it may seem banal that successful state-building usually grounds on a powerful financial basis and the opportunity to seize large amounts of money to finance both administration and military, Stasavage's proposition that the opportunity to obtain and manage reliable long-term debts was of much greater importance than raising taxes, tolls or export incomes offers a challenging new view of the premodern state-building process. Where older explanations have remained in materialist frameworks, this book adds culture.

Already in 2003, Stasavage pointed at the links between *Public Debt and the Birth of the Democratic State* (Stasavage 2003), and tested his thesis in a comparative study of British and French public debt from the taking over of the Whig Party in Britain in 1688 through to the French Revolution in 1789. In his second book now, he significantly broadens his view both geographically and chronologically. Thirty-one polities ('states') from the thirteenth through to the eighteenth century are compared and analysed in terms of size, political form and public long-term debt. The book traces the varying abilities of premodern European states in marketing long-term credits and obtaining acceptable interest rates.

Stasavage grounds his investigation on a large-scale data set of interest rates collected by S.R. Epstein for his book on *The Rise of States and Markets in Europe 1300–1700* (2000) and extends it chronologically and geographically. What is special about this data set, however, is that it considers different calculation methods (such as nominal rates vs. fiscal interest rate proxy) and different debt instruments. Moreover, it encompasses coded key information about the normative framework of the respective entities: the extent of control that different kinds of assemblies had over the sovereign, the frequency of their meetings, the forms of consent needed to raise taxes, and much more. Equipped with such an extensive and differentiated data set, Stasavage can run different statistical tests on the correlation between a state's political condition, its size and its ability to obtain debts at favourable interest rates.

As a result, Stasavage shows that "a city-state would be estimated to borrow at an interest rate two percentage points lower than a territorial state" and that two major factors that play for this instance were "small geographic scale and merchant political power" (17–8). Geographical scale, as he highlights in Chap. 4, turns out to be the most significant factor in monitoring costs as well as the financial market; thus, corrective actions against risky financial transactions are much more likely. In consequence, credit is cheaper in small-scale entities. Stasavage convincingly demonstrates these dynamics and their effects, arguing with both game theory and statistical tests. The role of a merchant oligarchy as the second major factor of success in obtaining favourable interest rates is discussed in Chaps. 6 and 7, where Stasavage presents three case studies each to demonstrate the influence of political control on the financial market in city-states (Cologne, Genoa, Siena) as well as territorial states (France, Castile, Holland).

After all, liquid creditors needed reliable debtors. Representative assemblies were good at controlling the sovereign's taxation and spendings in order to increase reliability—and where these assemblies consisted of merchants, they seemed most reliable to their fellow merchants who acted as creditors. The transaction costs of such assemblies, however, relied heavily on the geographical scale of the territory they took care of. This is why, as Stasavage shows in his book, expansion—be it militant or peaceful—led to an explosion of costs way beyond just military or other temporary spending.

Chapter 5, though thoroughly argued, seems a bit of an intellectual game. In this chapter, Stasavage asks for the origins of the city-state. His sweeping answer and suggestive data-based argumentation may strike some historians as surprising, for he identifies the collapse of the Lotharingian Empire in 870 and its division along the 'Meersen-line' as an explanation for the considerably early and strong urban development in this particular area. Distance from the central 'Meersen-line', he argues by a number of statistical tests, correlates to the attempts of cities within this region to establish political autonomy.

This book is strong in methodology, inspiring in its ideas and doubtlessly courageous in its theses. Its weaknesses, if there are any, may come out in the details of the more narrowly historical observations. Even more so, it challenges historians to venture into the intellectual experiment of discussing their case studies against the layer of this macro-perspective. On a more structural level, differences between city-states and territorial states may have been in some cases much less clear-cut than Stasavage presents them (the above-mentioned Epstein, for instance, sees much more convergence). But again, case does not automatically preclude model. This small book might turn out to be a landmark on our yet so fundamentally disciplinary paths towards a more fruitful collaboration of econometric and cultural perspectives.

Reviewed Sample Study 65

Practices of Trade and Credit (STEPHAN KÖHLER)

Steinbrink, Matthias. 2010. Handeln am Oberrhein. Der Basler Kaufmann Ulrich Meltinger. In *Praktiken des Handels, Geschäfte und soziale Beziehungen europäischer Kaufleute in Mittelalter und früher Neuzeit*, eds. Mark Häberlein, and Christof Jeggle, 191–208. Konstanz: UVK.

Methods: classification/types, microhistory, source interpretation/hermeneutics

Sources: merchants' handbooks

The study analyses the credit arrangements from a merchant from late fifteenth-century Basel, Ulrich Meltinger. The importance of the paper about Ulrich Meltinger is twofold. For one, Meltinger was a merchant who was active on regional and local markets and therefore studying his business gives us insight into the activities of small-scale entrepreneurs. The scholarly research, so Steinbrink argues, had for long devoted itself to the matters of famous international merchant bankers like Francesco

Datini and neglected the economic activities of "lesser merchants". Second, the case of Meltinger is of special importance since we are informed about most of his dealings through his main business book (merchant book), which covers the years from 1468 to 1493 on 376 folio sheets and is preserved to the present day in the city archives of Basel. Steinbrink used this source to write a thesis and an article about the business dealings of Meltinger and exploited the rich source material (Steinbrink 2007, 2010). Meltinger lost his fortune after he was accused of embezzling money from the Siechenhaus, a municipal welfare institution. It looks like this trial ruined his social capital on which his business relations rested.

Through analysis of the credit arrangements in Meltinger's business book, Steinbrink came to the conclusion that different types of credit operations can be assigned to different relationships, geographical networks and levels of commerce.

1. The intra-urban local environment: Although most of the loans listed in Meltinger's book were goods credits, nearly all of the business deals conducted within the city of Basel and with citizens were, at least partly, cash credits. Small-scale credit transactions, which Meltinger both gave and received as loans in the city of Basel, were conducted with people within Meltinger's immediate surroundings. Steinbrink could identify most of his debtors and creditors through systematic research of Meltinger's economic and public course of life. He shows that Meltinger was embedded in a tight urban network of people who not only provided each other assistance but also depended upon each other.
2. The urban hinterland environment: In the economic transactions between Meltinger and people from the urban hinterland of Basel goods credits were predominant. Meltinger mainly invested in drapery, wool, iron, steel and agistment (Viehverstellung; see reviewed sample study on Rippmann). The trade in clothes depicts Meltinger's economic activities. As supplier of wool and commercial customer of drapery, both urban and rural tradesmen depended on his services. Meltinger acted as the interface between the raw product and the finished good. He sold wool and raw products on credit to craftsmen. As can be seen in his accounting books many credits were never paid

back. As Steinbrink points out, long-term cooperation, or even the dependence of the producers, was far more important for Meltinger than the immediate loan repayment.

3. The interregional environment: Meltinger's third field of activities was (credit) investments in trade companies. Together with partners, which originated from the same upper socio-economic environment, he sold and bought wares on a large scale in foreign cities on credit. Once again, there was a high interdependency between the partners. Meltinger was an important supplier and customer of wares while his partners collected money and debts in foreign payment locations or acted as intermediaries.

The study deals with the strategy and practices of the commerce of Ulrich Meltinger within his social environment. Of particular interest is his role as intermediary between the urban and rural economies that can be reconstructed through source interpretation and microhistorical approaches using his business book. Steinbrink reconstructed Meltinger's life through careful reading of the sources. He did not stop his research at the merchant book but also used municipal sources like the land register of the city of Basel to reconstruct Meltinger's family, kinship and household. With this microhistorical approach, Steinbrink was able to analyse Meltinger's business from an economic-biographical point of view. Thus, Steinbrink identified several levels (*Ebenen*) of business activities in Meltinger's account book, which were transacted through different relationship networks and intermediaries. There were business activities within the city of Basel, with its rural surroundings and supra-regional dealings transacted through trading companies.

Meltinger's business book informs us about most of his dealings. Most of the entries in the book deal with credit-related business activities, like credit extensions, loan repayments or enforcement agreements (*Vollstreckungsvereinbarungen*). One can observe different forms of credit in his book, namely cash loans, goods credits, the free-of-charge allocation of goods with a later repayment in cash or wares (putting-out system), and investments and deposits in trade companies.

Steinbrink shows that Meltinger used different practices of credit, commodity and money trade to establish himself in the urban, rural and interregional trade. Whereas in the urban environment money credits predominated, goods credits were far more important for transactions in the rural surroundings. Through long-term credits and purchase agreements Meltinger created his own clientele in the surroundings of Basel. In the interregional trade, where he made the biggest share of his profit and thus compensated the non-enforceable debt claims, he invested large sums in trade companies. Steinbrink concludes that Meltinger conducted business in three different environments, which each on its own would not have been profitable for him. Thus, credit sometimes played a more important role in maintaining relationships than settling payment arrangements. The importance of these social ties becomes clear after Meltinger's trial for embezzlement and his following ruin, which was a direct consequence of the damaged mutual trust between Meltinger and his business partners.

Reviewed Sample Study 66

Money—Currency and Policy: Minting Ordinance and Contracts (SEBASTIAN STEINBACH)

Volckart, Oliver. 2017. *Eine Währung für das Reich. Die Akten der Münztage zu Speyer 1549 und 1557*. Stuttgart: Steiner.

Methods: source interpretation/hermeneutics, source presentation/edition

Sources: coins, contracts, minting ordinances

The creation of one currency for the whole territory of the Holy Roman Empire was one of the most ambitious projects of the emperors during the sixteenth century. With his edition of the files of the sessions (*Münztage*) in Speyer in 1549 and 1557—which took place in advance of the imperial minting ordinance in Augsburg 1551 and its reform in 1559—Oliver Volckart makes available the tremendous amount of written sources about that historical case and its discussions. Apart from the careful transcription of the sources (i.e. files, letters and mandates) over 431 pages, Volckart also gives a brief but detailed insight of the *Münztage* in Speyer: the German monetary system in the sixteenth century, the organisation of the sessions and the involved persons (officials, commissaries and diplomats) as well as a glossary of special terms and the agreed monetary standards of the negotiated coins (Volckart 2017, XXX–CI). Also, he considers the turbulent historical background of the reign of Charles V (1519–1556) and Ferdinand I (1558–1564) with its political and religious confrontations and their reflections on the currency system.

Volckart skilfully outlines in a first part the diversity of coins circulating within the boundaries of the Holy Roman Empire and explains the ratio of gold and silver as well as between book money and real coins depending on it. Then he describes the development of research on the coin policy of the German territories in the sixteenth century from Friedrich Freiherr von Schrötter (1862–1944) until the present and introduces the different types of sources used to complete the files of the *Münztage*. Giving a brief summary of the process of the three sessions in Speyer which led to the minting ordinance of 1551 and its reform in 1559, Volckart stresses the main interests of the different parties, their representatives and the influence of the historical background (the Schmalkaldic War of 1546–1547 and Rebellion of 1552–1555) on the debates, thus giving a broader view of the circumstances than only from an economic (or even monetary) perspective. Also interesting are his explanations about the town of Speyer in the middle of the sixteenth century, the possibilities of communication (postal services) and supply, the representatives of both the Emperor and the Imperial estates, the procedures of negotiation, and the voting methods.

Perhaps one of the most important chapters of this book is the analysis of the economic aims and problems the participants of the *Münztage* had to deal with (Volckart 2017, LII–LXIX): the main goal in creating a corporate monetary system for Volckart was not the promotion of trade and economy but the common good (*Gemeinnutz*). To reach this, the debasement of and the trade with coins should be stopped. As long as many different currency systems existed, it was lucrative to buy higher-value coins from one system, to melt them down and strike debased coins with the thus earned silver in another currency system. Also, the imitation of accepted coin types with reduced precious metal content was widespread. But also considering this case, the main concern was not the hindrance of trade but the reduction in incomes for the authorities by receiving debased money themselves. Also, Volckarts following explanations about the silver purchase, the mining industry, the debt policy, the creation of a bimetallic system and the overvaluation of the Saxonian Taler as well as the exchange rates between small change and valuable silver coins are very enlightening to understand the background of the arguments used by different representatives and the objectives they followed through.

Considering all this, Volckarts' book is much more than an edition and transcription of contemporary sources about the development of the minting ordinances in the sixteenth century, but the launch of a new understanding of the money policy during this period, something which the author himself sums up in six points at the end of the introduction (Volckart 2017, LXXXII–LXXXVI): (1) The *Münztage* were very effective considering their terms of dealing and the hearing of experts on certain themes. (2) Ferdinand I learned from the mistakes of 1549 and the disregard of the consensus of Charles V in prematurely publishing the minting ordinance of 1551, although critical questions had not been finally answered. (3) The securing of the monetary income of certain territories was much more important than the promotion of trade and economy in general for the representatives of the minting authorities. (4) The main contrast existed between estates with precious metal mines of their own and others, who had to buy the silver for striking coins. The estates with precious metal mines tried to refinance the rising mining costs by reducing the precious metal content, while the other estates supported a valuable and stable silver coin. (5) Most of all the Rhenish Prince-electors impeded the creation of an imperial currency for reasons of customs duty which had to be paid in gold. A bimetallic currency system and the equating of *Gulden* (gold) and *Guldiner* (silver) would have reduced the incomes of the toll by setting a stable exchange rate. (6) The ordinances failed not least because without an effective border control still large quantities of foreign money reached the Empire and exchange rates between greater silver coins (*Taler* and *Silbergulden*) and small change fluctuated substantially, both destabilising the currency system.

There is still a lot of research to be done on the motives of the different parties involved in the idea of creating an overall imperial currency system in the sixteenth century. But with the publication of files of the *Speyerer Münztage* 1549 and 1557 from Oliver Volckart, the primary sources are now available for future generations of economic and money historians. Most of all he shows once again that money and economy are always embedded in the political and social development of a time.

Reviewed Sample Study 67

Objects of Credit: Tally Sticks (TANJA SKAMBRAKS)

Wedell, Moritz. 2011. *Zählen. Semantische und praxeologische Studien zum numerischen Wissen im Mittelalter*. Göttingen: Vandenhoeck & Ruprecht.

Methods: classification/types, discourse analysis, source interpretation/hermeneutics

Sources: tally sticks

The book by Wedell uses the innovative approach of historical semantics for the study of the terms and concepts ‘counting’/‘number’ and combines it with an analysis of tally sticks as media used in different contexts, with the aim of developing a theory of numeric knowledge in the Middle Ages. Although his work is in many ways not strictly related to economic history, it provides valuable information on the usage, form and interpretation of tally sticks as objects of economic practices. Following his hypotheses that tallies served as a reminder, that they had no operative function, they were part of semi-oral communication and worked as proto-written media, his study comes to the following conclusions:

- Tally sticks developed from wooden objects primarily used in ritual contexts symbolising the transfer of power, offices or immobilia (in the form of festuca), to widely used objects emerging in more profane, but nevertheless locutoric (related to an act of speaking) contexts, like consumption or trade of goods.
- In the context of history of numeric knowledge, they are relevant for economic history regarding measurement, valuation and quantification as ubiquitous cultural techniques (concerning quantity, order,

property and memory) used in transactions of trade, credit and in the context of seigneurial labour services and revenues.
- They were often connected to legal texts, describing their usage, whereby different designations refer to different fields of application. Thus, tallies also functioned as preform of charters.
- Michael Clanchy has assumed a million-fold use of tally sticks. Wedell does not follow this thesis. He locates the use of tally sticks in a “small field of applications”, namely in the area of credit, debt and payment in the area of distance and retail trade as well as in court (236). However, these are very extensive zones of social action.
- Tally sticks are part of pragmatic written sources, although they are proto-literal objects and highly limited in what they can actually inform us about—they need to be connected to other (written) sources, like law texts, administrative documents enlightening their contexts of usage and content. Due to the notch itself, it is not possible to decide what a tally stick ‘says’ (235); rather, the integration of the environment of the finding is important.
- Their usage paralleled the use of written language. Notching was also an alternative to writing used regardless of the degree of literacy of its users.
- They are also one marker of monetisation from the eleventh century onwards, that is, the valuation of goods or services against money, of which they keep record.
- It is only in the early modern period that the dimension of sin in the history of salvation is introduced; connection to the counted piety comes very late.

Wedell combines different approaches: more traditional ones like historical philology, etymology and word history, as well as more recent ones like historical semantics and history of material culture. His methods are source interpretation and classification. He scrutinises dictionaries from early modern times, thus reconstructing the history of terms and semiotics, and he interprets archaeological findings. Thereby, he unites different disciplinary approaches in his analysis on numeric knowledge and tries to establish a discourse integrating archaeology, semantics and economic history.

The author uses notched woods from the Hanseatic region (Brygge, Bergen, also German examples) as well as the English exchequer tallies (these show centralisation, legal validity, connection to writing, Richard of Ely) and modern Swiss notch woods and peasant marks with purely local validity and oral standards. The latter served the distribution of duties and the certification of the rights of use at the pasture, or have the character of commemorative marks.

Any generalisation of those results is impossible. Due to the difficult situation of research and tradition of tally sticks, the author has to collect various single findings and limited cases. Hence, his results are selective and intermittent (self-critical author, 261). Nevertheless, the interdisciplinary methodological approach of this study nicely shows the possibilities of interpreting objects used in economic contexts of transfer of goods, credit and rights from a wider cultural perspective, re-integrating economics and cultural history.

Reviewed Sample Study 68

Credit Institutions: Hospitals (SVEN RABELER)

Wirtz, Thomas. 2013. *Hospital und Hypothek. Das kommunale St. Jakobshospital auf dem Trierer Renten- und Immobilienmarkt 1450–1600*. Trier: Kliomedia.

Methods: descriptive statistics, microhistory, source interpretation/hermeneutics

Sources: accounts, charters, urban administrative sources

Hospitals as creditors are often taken into account when studying the economy of these charitable foundations, especially in the case of the larger ones situated in cities and which were households of considerable size. There are a lot of monographs about individual hospitals which offer chapters dealing with their income from interest. However, a hospital's role on the credit market is rarely the central issue of research, and even more seldom is this connected to analysing the local credit market as a whole, thus contextualising the hospital's financial acting. One of the exceptions so far is Wirtz's dissertation about St Jacob's Hospital in Trier.

On the one hand, Wirtz analyses the credit and real estate market in Trier, its extent and development, as well as persons, groups and institutions participating in it. Here 'credit' means interest based on real estate (*Renten*), whereas other forms of lending money (e.g. on pledge) are not considered. That is not only motivated by the available sources but also by the credit practice of hospitals generally being orientated towards Renten because, on the other hand, the study deals in greater detail with St Jacob's Hospital as an actor on these closely linked markets: with its behaviour as a money lender and property owner, with the organisation of lending and the treatment of debtors, and with the political functions of credits and land acquisitions. There are two groups of serial sources allowing the necessary quantifiable access: first, the magistrate's registers of real estates (*Liegenschaftsregister*) that were used to inscribe transfers of properties and buildings as well as Renten connected with it; and, second, the much more frequently preserved account books of the master of St Jacob's Hospital (*Hospitalmeister*) and those of the 'master of interest' (*Zinsmeister*) that documented the revenues and expenses of the hospital's household and its interest income. These main sources are supplemented by charters. The material is analysed in a statistical way, partially intertwined with personal aspects and including chronological and spatial dimensions: the phases of the credit market's development from the mid-fifteenth to late sixteenth century and the city's topography. According to the study's twofold question, the analysis combines two perspectives: the conditions of the market and the actions of the institution.

Regarding the credit market—more accurately, the market of Renten—in the city of Trier, Wirtz's study underlines the significance of institutional creditors in general and of St Jacob's Hospital, the greatest creditor in the city, in particular (for a rural context cf., e.g., Bünz 2016; Gilomen 2016). That applies not least to smaller credits because 41% of the sums lent by the hospital did not exceed an amount of 25 Gulden—under the premise, however, that the debtor had an estate which could be debited (in the municipal registers the average credit sum of private lenders was 127.7 Gulden; that of all institutional lenders including parish churches, monasteries and fraternities only 74.5 Gulden during the whole investigation period). Controlled by the magistrate, the hospital was an instrument of the urban treasury and thus also part of the town as the citizens' 'savings and loan bank' (*Spar- und Darlehenskasse*, Wunder 1987). In the course of the sixteenth century, the credit administration and the related accounting of the city's magistrate and St Jacob's Hospital mingled increasingly. To some extent, Wirtz sees the hospital as an instrument of the magistrate's 'social policy', too, although the evidence related to this aspect is rather sporadic besides the mentioned granting of smaller Renten, which fulfilled an important function on the credit market. Furthermore, St Jacob's Hospital served the city's territorial ambitions by granting credits in the surrounding area.

Exemplarily, the study not only reveals possibilities of quantitative methods concerning the financial history of a medium-sized urban centre and a hospital as an important financial institution during the Late Middle Ages and the beginning Early Modern Period but also the limits of statistical analysing sources from a non-statistical era. For example, the guild to which debtors belonged seems to be a rather weak indicator of their individual social position, apart from the often incomplete information given by the sources in these and other cases. As a whole, the database stretching over two and a half centuries (423 relevant entries in the municipal registers, among which 76 relate to St Jacob's Hospital—including account books and charters, 457 Renten of the hospital can be verified) is not abundant but can be made to speak if handled carefully. Frequently, the sources of institutional lenders like hospitals, parish churches, monasteries or fraternities are more numerous and more telling than those regarding the local credit market in general, but the contextualisation of an institution's acting is just as revealing. Furthermore, hospitals controlled by the magistrate are important to understand the financial scopes and politics of the city's authorities. Finally, hospitals could play a significant role in the credit relations between a city and its surrounding area (the *Umland*—see also, e.g., Rabeler 2004).

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9

Glossary of Methodological Approaches

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Ways to Deal with the Sources: A Glossary of Approaches and Methods

This glossary provides a concise overview of all the methods and approaches employed in the reviewed sample studies (see Chaps. 6, 7 and 8). We use the term method in a very broad sense: It comprises all the possible ways of dealing with the sources. The glossary thus gives an impression of how a tool kit for doing premodern economic history could look like. If you want to apply any of the methods yourself, we recommend consulting the literature cited in the respective section. You cannot learn how to apply a method by reading this glossary, but we will give you an impression of how the method works, which should help you decide whether this approach may help you deal with your sources and answer the questions that you are studying. Every section summarises the basic idea underlying this approach. It sketches how the method is applied and which sources and data you need if you want to get meaningful results. The choice of a method for doing a study in premodern economic history depends heavily on the sources that have survived and are available. Every section thus points out the scope and the limitations of the respective method.

The glossary and the reviewed sample studies are closely interlinked: The glossary describes those methods and approaches which are employed in the reviewed sample studies. This way you are always able to check how this particular approach is implemented in practice. As you will notice, if you compare the methods described here with the methodological approaches employed in the reviewed sample studies, the entries in this glossary often describe the approaches in more detail and greater complexity than they appear if you see them implemented in practice. The entries here often list a number of steps that have to be performed when working with the approach described. Most of the reviewed sample studies, however, do not talk explicitly about all the different steps. Some use them without explicitly pointing them out, while others do not use all of the possible steps. For instance, institutional analysis is depicted here as a neatly structured analysis. In Chaps. 6, 7 and 8, in contrast, we tagged all reviewed sample studies with the keyword 'institutional analysis' that discuss the effects of a certain institutional setting on the shape and performance of a certain part of the economy. The same is true for source interpretation: The section on source interpretation in this chapter outlines a number of steps that a researcher working with this method has to perform. Hardly any reviewed sample study employing source interpretation as its methodological approach discusses these steps explicitly.

The approaches stem from historical research as well as from economics; some can be described as quantitative and others as qualitative methods; some approaches can be regarded as traditional and well tested, while others are innovative and riskier to apply. As Chaps. 6, 7 and 8 show, nearly all the reviewed sample studies employ more than one methodological approach. Most reviewed sample studies use descriptive statistics or source interpretation (or both) to get a first impression of the content of the sources. They then go on to work with other methods to add layers of interpretation. For instance, Bruch combines a source interpretation of monastery accounts with a comparison of six different Cistercian monasteries (see reviewed sample study 1). Gelderblom et al. first use descriptive statistics of credit transactions registered by aldermen and notaries to gauge the credit market, and then employ a regression analysis to find out why registration was shifted from aldermen to notaries (see reviewed sample study 51). In some of the studies presented here, descriptive statistics and source interpretation are combined to render a thorough analysis of the sources. Rippmann, for example, uses source interpretation and descriptive statistics to analyse accounts and tax lists to get a nuanced picture of women's work in the Upper Rhine region (see reviewed sample study 13). A number of studies use more than two methodological approaches to explore a phenomenon from different perspectives. For example, Börner and Quint classify different types of brokerage rules, analyse their institutional set-up, build a model of their effects on welfare and run a regression analysis to determine why a particular rule was employed in a certain city (see reviewed sample study 43).

Taken together, the different methodological approaches show the rich diversity of methods and approaches that can help us to get a grasp on premodern economic phenomena and transformations. You may read the glossary as a whole if you want to get an impression of the approaches currently applied in economic research on the Holy Roman Empire, or you can look up single entries to learn more about a method used in a specific reviewed sample study.

Analytical Bibliography (Karina de la Garza-Gil)

Analytical bibliography, a 'branch' of bibliography, is a method traditionally used by researchers of the production of incunabula (books printed before the sixteenth century) who are especially interested in finding out how the books were produced. However, it can also be applied to the study of the production of manuscripts or later printed material.

Analytical bibliography studies books (incunabula) as material objects. This means that the researcher concentrates on finding out as much information as possible regarding their production. She analyses the different materials and plausible practices that could have been involved in their making. This typically comprises a study of the paper (watermarks, establishing format, establishing conjugacy or the presence of cancels, etc.), the analysis of all the marks left on it by the process of printing (first- and second-form impressions, ink smears, blind impressions, point holes etc.), the analysis of metal type (printer classification, broken type, raised type, fallen type etc.) and the analysis of composition (i.e. setting the text for printing).

The scarce survival of contemporary sources of information relevant to questions pertaining to the production of incunabula is one of the reasons why the books are considered as material objects of study. There are no extant sources which describe the way the first presses were used (practices and methods of printing), and only a small number of sources attest to the organisation of early printing houses (ledgers, manuals, correspondence, exemplars). Even fewer sources testify the skills the master printers possessed. For this reason, the books themselves become an essential source of information.

However, analytical bibliography does not exclude the use of any surviving archival or historical material, nor the analysis of text or language which could be of relevance for the objective of any given study (see entries on source interpretation and discourse analysis). This means that any source of information, other than the information which can be obtained by the material analysis of the books as explained above, can (and should) be included in the final evaluation of data. For further reading see Harris (2004) and Hellinga (1989).

See reviewed sample studies 6, 32.

Archaeological Methods (Ulrich Müller)

In addition to preparation methods for excavations, archaeological structures are revealed by layer and stratigraphic excavations and then documented both graphically and in writing (Fehring [3]2007; Scholkmann et al. 2016). With plana excavation, excavations are conducted according to predetermined uniform sizes. With stratigraphic excavation, the floor of the excavation area corresponds to the real former horizon. The former identifies contiguous structures (e.g. a large market surface with footprints), while the latter requires sophisticated excavation techniques in order to detect differences (e.g. in market surfaces). In further evaluation steps, the features are consolidated to simultaneous phases and then classified in an absolute chronological order. For this purpose, not only scientific data (e.g. dendro data), coins and artefacts but also written sources are consulted.

Features found at markets include—in addition to foundations, post traces, pits, graves, technical equipment and pipelines—the historical surfaces. This encompasses traces of movements (people, animals, chariots), waste disposal and/or cleaning activities. Such market surfaces are highly dynamic. The surfaces are continually modelled by constant walking and driving activities and are altered by weather conditions, which can affect entire market areas or only selective areas. Negative features may suggest the cleaning of surfaces, while layers of dirt indicate neglect. In many places, the traces of wagons are detected. They are not only interpreted as signs of transport and evidence of traffic directions but could also serve as indications of the location of vehicles and thus wheel-rut. Constructions (benches, stands) are often only detectable via the traces of posts. Purposeful surface structuring can already be detected in the Early Middle Ages (Cologne, Heumarkt), but it becomes standard from the thirteenth century onwards, which certainly coincides with changes in waste disposal. Besides simple levelling, paving (pebbles, stone slabs) can be observed, which enabled easier movement and cleaning. Compaction was also achieved through admixtures with animal bones, ceramics or other materials.

Findings do not exclusively reflect trade activities (Garraty and Stark 2010; Hahn and Schmitz 2018). Find material often indicates craft activities, logistics (packaging, transport), waste disposal or everyday use. Cloth seals, scales and weights or coins serve as direct or indirect evidence. Mass finds or special objects also enable inferences to regional and supra-regional networks. Indications towards the infrastructure, particularly transport (horseshoes), consumption or craft activities, can be found more often than direct evidence of trade.

At first glance, distribution maps of findings (e.g. ceramics) span the gap between local and super-regional trade. However, they reflect much more complex interaction paths and forms, which are decisively contoured by spatial-statistical methods (see section on digital mapping) or network analyses (see section on network analysis) as a kind of hypothesis-generating or explorative technique (Wehner 2017). For the analysis of the distribution of findings on a marketplace, density maps are often used in addition to traditional point maps in order to outline activity areas across spaces (Reitz and Zierden 2005). Questions concerning the origins of artefacts, animals and plants can be complemented by an archaeometric analysis as well as geochemical, archaeozoological or archaeobotanical investigations (Coronel et al. 2014). They require a representative data basis in order to, for example, isolate fishing grounds for cod via the implementation of isotope analyses. Such find analyses can be supplemented by scientific cultural study approaches, which, for example, make inquiries about strategies of appropriation on the basis of object-biographical and consumer theory concepts (Heath et al. 2017).

However, excavations often do not include entire objects (e.g. an entire marketplace) and are dependent on a variety of formation processes (conservation, selection, incidence) of former and current societies. Since findings are destroyed by excavations, an exact assessment of what should and what should not be documented is necessary. In this respect, one problem is the degree of exactness. Moreover, recognising structures on the basis of features (e.g. post-construction) is always a reflective but irreversible process. For an overall understanding, it is important to establish whether data are interpreted from a procedural or post-procedural perspective. The former developed in the late 1970s and 1980s. It strongly emphasises the subjectivity of archaeological interpretations, recognises the multidimensionality of the social practices of social actors and stresses a phenomenological, hermeneutic approach. The latter perspective derives from the New Archaeology of the 1960s and gives priority to deductive explanations. It assumes that historical interpretations can be developed on the basis of theories, which are based on an objective perception of the collected data. It underlines human-environmental interactions, is interested in spatially and temporally wide-ranging cultural processes and accentuates quantifying and modelling methods. Although today, in light of theoretical pragmatism (Harris 2017; Müller 2018), these strict dividing lines appear to be less stringent, these basic assumptions continue to influence excavation methods and interpretations. For further reading see Fehring ([3]2007) and Scholkmann et al. (2016).

See reviewed sample studies 20, 37, 39, 41.

Basket of Goods (Kathrin Pindl)

A basket of goods as a model *and* a method in economic history and economics consists of a set of representative products and services for a certain market or region. Baskets of goods are used in the context of the assessment and measurement of living standards, for example, by computing a consumer price index (CPI). Therefore, it aims at reflecting the average household expenditure on foodstuff, housing, energy and other everyday necessities. Which items are put into such a basket in what quantities is of course decided by the researcher, and this choice depends first on the economic issue of interest, that is, the measurement of inflation, purchasing power of wages or nutritional status. However, since for the computation of a CPI not only wage data, but also data on prices and quantities of commodities are needed, in historical analyses at least the selection of items is also directed by the availability of such data. Most of the necessary long series of price data for computing historical baskets of goods stem from institutions, that is, cities, hospitals, monasteries and so on.

To calculate a consumer price index (CPI) on the basis of a premodern basket of goods, the data on quantities, prices and wages are commonly displayed in a spreadsheet and operationalised via basic statistics software such as Excel or Calc. This is done in the following way: The researcher creates a spreadsheet with the prices for each good for every year of observation. She then weighs the expenditure, that is, she determines the ratio of how much the premodern consumer spends on average per year or month for each group of goods (e.g. living, food, clothing, security and luxury). Finally, the basket of goods is fixed in order to statistically observe its monetary value over time, mostly on an annual or monthly basis (see section on descriptive statistics), and thus to track certain economic effects like inflation or deflation. There are also several mathematical ways of how to compute a CPI; the most common being the fixed-weight Laspeyres Index. However, there are many other possible formulae for calculating a consumer price index, for example, the Paasche Index or the Geometric Index, to name just two. They all aggregate the data in a different way. The choice depends on the preferences of the researcher and the data quality.

For historical as well as for modern baskets of goods, numerous methodological challenges arise, for example, changes in consumer habits, the availability and density of historical price series, the conversion of historical units of measurement and payment, or the actual consumption by premodern people (anthropometrical questions of calorical needs). It is important to acknowledge that a CPI based on a historical basket of goods will always be a statistical approximation instead of a 1:1 reflection of historical reality. However, it still expands our empirical knowledge on standards of living (Table 9.1).

Table 9.1 An exemplary basket of goods, here: a premodern basket of goods for the Southern German town of Mühldorf am Inn which belonged to Salzburg and was surrounded by Bavarian territory for the years 1550–1700, with the base year of 1550, source: author's calculation on the basis of Stadtkammerrechnungen Mühldorf am Inn R1/67 to R1/244

Basket of goods	Year	1550					
	Quantity per person per year	Unit	Price in gram fine silver per year	Pr.	% of total expenses	Calories per kg/l/ piece	Calories per day
Bread	91.25	kg	0.636	58.1	19.4%	2450	613
Buns	36.50	kg	0.955	34.8	11.6%	2450	245
Beer	365.00	l	0.030	11.0	3.7%	426	426
Candles	3.65	kg	5.345	19.5	6.5%		
Meat	25.55	kg	0.472	12.1	4.0%	2500	175
Grain	73.00	kg	0.372	27.2	9.1%	2400	480
Subtotal				**162.7**	**54.2%**		**1939**
Rent				30.0	10.0%		
Firewood	1022.3	kg	0.022	22.7	7.6%		
Cabbage/ vegetables	54.8	kg	0.320	17.5	5.8%	800	120
Soap	2.6	kg	2.880	7.5	2.5%		
Spices	0.3	kg	15.000	4.5	1.5%		
Textiles	5.0	m	4.369	21.8	7.3%		
Cheese	5.2	kg	2.843	14.8	4.9%	3750	53
Butter	5.2	kg	3.470	18.0	6.0%	7286	104
Eggs	52.0	Stück	0.010	0.5	0.2%	79	11
Subtotal				**137.4**	**45.8%**		**288**
Total				**300.0**	**100.0%**		**2227**

For further reading see Allen (2001).
See reviewed sample study 21.

Classification/Types (Ulla Kypta)

The basic idea of classification is to group your empirical findings into more abstract classes or categories or types. This helps you grasp the essential, basic features of the phenomena you want to study, though of course you lose all the specific details of each single entity. Classification consists of creating types. Max Weber famously named them 'ideal types' (Weber 1904): They are ideal in the sense that they show not the real, but the ideal form of a phenomenon. Classification in this regard resembles modelling (see section on modelling): You create something—a model or a type—which does not exist in this form in reality. But it nonetheless helps you to better understand one aspect of reality by focusing on its essential features.

Creating an ideal type means generalising: An ideal type (or a class or type) systematically summarises historically specific cases. To a certain degree, every historian has to generalise: Without generalisation, you can only study single cases. As soon as you claim to learn something from this single case which can also be applied to other cases, you are generalising. However, claiming to have found some general feature of certain historical phenomena does not mean that you claim that they are universal, that is, that this feature characterises all comparable historical phenomena. If you find out that some medieval towns in Europe were ruled by merchants and you create the ideal type of the merchant city, you do not claim that all medieval towns (or even all towns in general in the world) were ruled by merchants. But you claim that a number of medieval cities were ruled by merchants, and that grouping them together into the category 'merchant city' helps us to see something which we would not be able to see if we studied them separately. In order to distinguish between generality and universality, you always have to make clear for which time, region and other circumstances your generalisations hold true.

Classification can be done in an either inductive or deductive way. You work inductively if you start with scrutinising the sources and then group your empirical findings into types or categories. The categories you create depend on what you are interested in: You can categorise different types of persons, groups or objects, professions or estates, different political systems, economic regimes or different types of economic change. Creating types from empirical material is important not only for historians, but also for sociologists. They call this approach 'grounded theory', since a theory is being built up while reading the sources (Charmaz 2006).

If you work deductively, on the other hand, you start, not with the empirical material, but with the abstract types. This is how Max Weber described working with ideal types: Start with choosing ideal types which consist of the most essential characteristics of your object of investigation. This means, of course, that you must know what your object of investigation is and what its most essential characteristics are. So, whether you proceed inductively or deductively, you have to have some general idea about your object of investigation and its general characteristics. If you work inductively, you start by reading your sources thoroughly and in a second step create ideal types, whereas in a deductive approach, you start with creating ideal types and then go on to read the sources thoroughly. In a deductive approach, you normally choose the ideal types suitable for your study from the existing literature. Then you have to check your sources and group the empirical cases according to the ideal types that you have chosen. The ideal types help you analyse your sources more systematically, and they sharpen your view for similarities and differences. Besides, the empirical study serves as a test for the ideal types you have chosen: Do the ideal types really cover the essential characteristics of your empirical data? The empirical study can thus lead to a refinement of the ideal types, which can be fruitful for other researchers who can now work with the refined, better ideal types that you have created.

If you want to group your material into types, you need a number of cases. If you study only one town, you cannot build a classification of towns; you can only classify the town you are studying according to an already existing classification. Creating types helps you to focus on the essential characteristics of a phenomenon. Thus, its main challenge lies in recognising what these essential characteristics are. It is necessary to keep questioning and refining the ideal types in order to make sure that they comprise the important features of the phenomenon you want to study.

Classification helps you grasp the essential features of a phenomenon, which is only possible because all the specific details of one historical case are regarded as not important. Classification thus always simplifies historical reality. The essential characteristics of ideal types are often summarised in a table. Building your own classification frequently serves as a first step for a comparison (see section on comparison). For further reading see Lengwiler (2011) and Charmaz (2006).

See reviewed sample studies 4, 7, 8, 10, 11, 12, 14, 19, 24, 26, 41, 42, 55, 57, 58, 60, 61, 65, 67.

Coin Hoard Analysis (Sebastian Steinbach)

One of the most important methods of money history and numismatics is the analysis of coin hoards. Coin hoards can be studied in terms of time structure (time of accumulation), geographical structure (region of accumulation) and value structure (value of the coins contained). It is possible to define the circulation and volume of coins travelling within a certain geographical (economic) region during a specified time period. There has been much debate on the representativeness of coin hoards as an intentional collection reflecting the money in circulation, since within the large hoards usually only the more valuable coins were accumulated. Single finds are more representative of the money used in everyday circulation (small change), but small coins also have a greater chance of getting lost. In consequence, coin hoards have to be adjusted with the help of written sources in order to get a more reliable statement on the money which circulated 'in reality'.

The youngest coin in a hoard allows the determination of a time of burial (*terminus post quem*) for the whole complex. Considering this, hoards and single finds are also a valuable source for archaeologists to date other finds within their excavations. The number and value of coins contained in a hoard makes it possible to draw conclusions about the economic situation of its former owner, his social position, trade relations/routes and the possible reasons for the concealment of the hoard. For further reading see Grierson (1965, I–XIII), (1966, I–XXI), Klüßendorf (2009, 25–34) and McDonald (1903).

See reviewed sample study 54.

Comparison (Ulla Kypta)

One of the basic methods in every scientific discipline is to compare phenomena. It can be regarded as an almost intuitive idea: If you want to find out something about a phenomenon, you compare it with others and notice similarities and differences. This helps your understanding of the phenomenon. If you take things one step further, you do not only describe similarities and differences, but you try to explain them as well. The first step is a descriptive approach and the second step is an analytical comparative approach. One of the most prominent proponents of comparative approaches in historical research was Marc Bloch (1928), the famous French historian who founded the Annales school in the first half of the twentieth century.

If you want to use a comparative approach, you need to study phenomena that can be compared. This sounds self-evident, but it means that you must see something similar in all the phenomena you are studying. If you think that every historical case is completely unique, you will not be able to compare it with any others. In practice, every comparative study has to start with this question: What do you see as the element to which the phenomena can be compared? In other words, what do you regard as the feature that all your cases have in common, so that you can compare them? For example, if you want to study the economic policy of city councils, you have to assume that all of them employed an economic policy. This feature you want to compare is called *tertium comparationis*. It is often an ideal type (see section on classification).

The first step of a comparative study consists in deciding what you are interested in: What do you want to compare? You can compare economic policies of a city council, but also towns in general, regions or kingdoms, professions or genders. Furthermore, you have to decide whether you compare the economic policy of different cities during the same time frame or compare the economic policy of one city during the fifteenth century with the same city's policy during the sixteenth century. 'Economic policy' is an abstract concept, so you need to think about the variables that you can use to grasp 'economic policy'; for example, did the city council regulate prices? If you compare regions, you also have to decide about the variables you want to include, for example, population or urban ratio. Once you establish the *tertium comparationis* and its variables, you have to choose the cases you want to compare. Which cities or professions or centuries do you want to contrast with each other? How many cases do you need in order to get meaningful results?

A descriptive comparison can be done by individualising or by universalising (Tilly 1984). In the first case, you compare phenomena to highlight their differences; in the second case, you underline the similarities. In practice, of course, most studies combine individualising and universalising elements. The 'encompassing comparison' delineates the similarities of the better part of the case studies, but then contrasts them with the other cases. The 'variation-finding comparison' first establishes groups of reviewed case studies which are all similar with regard to a certain feature and then describes the internal differences between the group members (Tilly 1984, 82f.).

The analytical comparison not only wants to describe similarities and differences, but wants to explain them as well. The similarity or difference that should be explained can be regarded as the dependent variable. The task is then to find the independent variable which causally influences the dependent variable. This can be done with a range of different approaches. For a small number of case studies, it can be done by hermeneutics (see section on source interpretation/hermeneutics); for larger numbers, regression analysis can be employed (see section on regression analysis). Historians sometimes (if mostly implicitly) use two methods that are famous in comparative political science and were described by John Stuart Mill in his *System of Logic* (1843). The 'method of difference' assembles cases in which the dependent variables vary widely, while the independent variables (i.e. the context) are similar. In other words, you try to explain why a certain phenomenon sometimes appears and sometimes does not. For example, you might like to find out why certain Hanse cities allowed craftsmen to be part of the city council and others not. You compare the independent variables (i.e. the context) of all the cities that allowed craftsmen to be on the council with all the cities that did not allow it. Then you can rule out any of the independent variables that can be found in craftsmen and non-craftsmen towns alike: They cannot explain the difference.

The method of agreement, in contrast, analyses cases in which the dependent variables are similar, but the independent variables (or the context) differ. In other words, you will try to find out why a certain phenomenon can be found in very diverse circumstances. For instance, you might like to find out why people in almost all German cities bought annuities. All the independent variables (or circumstances) that can be found in one city of annuity-buyers but not in the other can be excluded from the possible causes for annuity-buying.

To get meaningful results from a comparison, it is necessary to compare a number of cases. If your main aim is to describe similarities and differences, just two cases might be enough. But if you want to explain the differences and similarities, a larger number of cases is necessary. If you compare only two Hanse cities, one that allowed craftsmen into the city council and one that did not, it is difficult to assess the reason. All the differences between the two towns are possible explanations, and you need more cases in order to rule out some of the possibilities. It is vital to include all the possible variables into your analysis. Otherwise, it could happen that none of the variables you included are the cause of the phenomenon, and your search is either in vain or, even worse, you might be inclined to judge the wrong variable as the most important influence on the phenomenon you aim to explain.

But of course, historical phenomena seldom have only one cause, and one cause can have quite different effects in different circumstances. Thus, comparative studies should not be regarded as an easy and watertight way of establishing causal relationship. But they can give an impression of possible causes and clusters of causes, which can then be examined in more depth.

The results of comparative studies are often displayed as tables that give an overview of similarities and differences between the cases. To explain the differences and similarities, however, continuous text is more helpful. For further reading see Haupt and Kocka (1996), Kaelble (1999) and Puhle (1979).

See reviewed sample studies 1, 4, 5, 7, 8, 10, 14, 15, 16, 18, 21, 26, 27, 33, 34, 42, 43, 46, 48, 54, 56, 57, 59, 60, 61, 62, 64.

Descriptive Statistics (Ulla Kypta)

Whenever you extract numerical data from your sources, it can be helpful to calculate some descriptive statistics to get a grasp of it. Descriptive statistics aim at summarising—variable by variable—the statistical properties of your data. In contrast, more complex methods are employed to explore the relationship between different variables (see section on regression analysis). Furthermore, descriptive statistics are distinguished from inductive or inferential statistics: Descriptive statistics summarise existing data, whereas inferential statistics offer tools to determine unobservable values either inside the range of the observed data (interpolation) or outside this range (extrapolation) (see section on time series analysis).

To summarise existing data, one very convenient tool is the mean. There are different means which are calculated differently and tell you different things about your data. The arithmetic mean is the most prominent one. If you read in an article that a number is 'the mean' without further qualifications, it normally means the arithmetic mean. It is calculated by adding up all the numbers in the data set and then dividing this aggregate number by the number of observations. The arithmetic mean is very sensitive to extreme values. Therefore, it is helpful in cases when you want to summarise data sets in which all the values are close to each other. One very high or very low value shifts the arithmetic mean to a quite high or rather low number, and in such a situation, the arithmetic mean gives a false impression of the data set: It does not tell you that most values are lower or higher than the arithmetic mean. For these kinds of data sets, the median is a more appropriate mean. It is the value that lies in the middle of the data set: Half the values are larger, and half the values are lower. A third mean is the mode, which is the value that is taken most frequently in the data set.

Another instructive way of summarising the data is to say how widely dispersed the data is. The range gives the difference between the largest and the smallest value. A more complex statistic is the standard deviation. It tells you whether the values in your data set are widely dispersed or close to each other. To calculate the standard deviation, in a first step one takes the differences between the arithmetic mean and each number in the data set, squares these differences and then finds the mean of these squared differences. This results in a number which is called the variance. In a second step, one takes the square root of the variance and gets the standard deviation. If the standard deviation is small, the values are not widely dispersed. The ratio of the standard deviation to the mean, furthermore, is called the coefficient of variation. The coefficient of variation helps to compare the standard deviations of different value sets. They cannot be compared directly, since they often are measured in different units and thus have a differently scaled mean. Calculating the respective coefficient of variation, however, gives numbers that can be meaningfully compared: The value set with the higher coefficient of variation exhibits more variation around its mean than the other value set. Values like the mean or the standard deviation are called 'a statistic', since they summarise the data set.

To employ descriptive statistics, you need to have a data set that is not too small. It is not very instructive and can even be misleading to calculate a mean from only five values. Furthermore, all the values that are summarised in a statistic have to be values of the same variable. In historical research, it is sometimes challenging to make sure that, for example, the values of certain duties for a number of decades can be regarded as values of the same variable: The mode of collecting duties could have changed, more groups of people could be exempted from the dues and so on. Last but not least, you need continuous data to employ statistical methods, and these are seldom easy to get, especially for premodern times.

The advantages and disadvantages of using statistical tools are widely discussed in the humanities, but also in society at large. Some people argue that statistics can take away the ambiguity that makes human life and history interesting. For example, it reduces the information contained in the data set: Instead of a number of different values, you end up with one arithmetic mean. Defenders of statistical methods say that by taking away ambiguity, they bring clarity and allow you to come to terms with data sets which are too large to be handled without mathematical methods. As Hand (2008) describes it in his popular introduction into statistics (Hand 2008, 24): "Many people are resistant to the notion that numerical data can convey the beauty of the real world. They feel that somehow converting things to numbers strips away the magic. In fact, they could not be more wrong. Numbers have the potential to allow us to perceive that beauty, that magic, more clearly and more deeply, and to appreciate it more fully." This is especially true if charts and graphs are employed to present complex relationships.

Hand's book is an introduction for the general public. It presupposes neither mathematical nor statistical knowledge and gives an overview of the main ideas and concepts of statistics. There are heaps of introductory books into statistical methods and the software programs to use them, and most economic, sociology and other departments offer introductory courses as well. Some books are written especially for historians (e.g. Feinstein and Thomas 2002, chapter 2; Floud 1973; Thome 1989). These are mainly concerned with historical research that covers the modern period, since it is only for the last two centuries that enough data can be mined to employ the more complex statistical methods. The more difficult question of how to use statistics for premodern economic history is seldom addressed in detail. For further reading see Feinstein and Thomas (2002), Floud (1973) and Thome (1989).

See reviewed sample studies 2, 5, 12, 13, 17, 18, 21, 23, 27, 28, 35, 36, 37, 51, 57, 64, 68.

Die Analysis (Sebastian Steinbach)

If one wants to get information about the volume of coin emissions, but there are no written sources to consult, the analysis of minting dies (*Stempelkritik*) brings indications to light: Based on the fact that as a rule two dies were used for the striking of the obverse and reverse of one coin type, the combination of these two—which were not combined strictly as a pair, but changed when necessary—allows us to distinguish several connections of dies and to determine a chronology of the several types by drawing a 'pedigree of dies'. It is also possible to calculate the volume of the circulating coins of one type (emission) by mathematical methods based on the estimated number of coins that could be struck by one die (normally between 1000 and 10,000 coins in ancient and medieval times).

However, one can only do that if the numismatic material of one type (in other words every single known coin of one type) is recorded almost completely. Furthermore, one has to differentiate between more experienced mints and smaller ones, which struck coins only sporadically. One also has to keep in mind that the obverse die—which has been handled freely by the person who struck the coin—had a shorter period of usage than the reverse die—which had been fixed in a wooden or stone block. The mathematical formula to calculate the number of dies used for an emission of coins is: $D = (n \times d) : (n - d^1)$. Meaning D = original number of dies used, n = number of coins examined, d = number of dies found by examining the coins and d^1 = number of dies verified by only one of the examined coins.

In early modern times, the striking of coins with machines such as a rolling mill allowed to produce larger quantities of coins within a shorter period of time and with a smaller error rate. From the Late Middle Ages, written sources give us further information about the volume of minting of a certain coin type. Considering this, the use of the analysis of minting dies for coins is a useful approach to assess the quantities of coins only up to the sixteenth century. For further reading see Kluge (1989).

See reviewed sample study 54.

Digital Mapping (GIS) (Niels Petersen)

The use of maps has played quite a small role in historical research, although their benefit has been widely acknowledged, especially following the so-called spatial turn in historical research. Usually maps are mostly used to illustrate certain geographical relations, rather than to add another layer of analysis or to support an argument. Very seldom will one find maps depicting complex temporal features. The production of maps in general needs expertise that is not always available; furthermore, the printing process limits the information that can be presented in a map. Hence, the relation between time and space in historical events and processes is usually described in the form of text.

The most common maps that depict temporal dynamics deal with the development of settlements and cities in space during a certain time period. The urban expansion over time is normally shown as monodirectional. When structures or whole quarters disappear—or maybe even reappear at a later point in time—the printed map reaches its limits. Trade fairs and markets take place at certain times of the year, which means they appear and reappear over time. The system of the Champaign fairs is a famous example that could hardly be understood without the knowledge of their spatiotemporal distribution. A third aspect is movement through space during time. Be it movement of goods or of people or the distribution of information about an event, the identified locations would usually be connected with a date or timestamp. Common examples are maps of the itineraries of German emperors during their reigns: The respective data can be derived from the charters they issued while they stayed at a certain location.

Digital mapping solves a lot of problems with the presentation of spatiotemporal information, as not every information has to be organised on just one map. While it is often necessary to print a series of maps in order to show temporal dynamics, digital mapping is able to store all information at once, but present just the parts necessary to get certain information. The tool that is commonly used for digital mapping is a Geographical Information System (GIS) that allows a map to be drawn and certain information assigned to every element. This information is stored in a so-called geodatabase. It includes geographical data that can be enhanced by temporal data, textual description, even photos or graphics and statistical data, such as toll rates or population. It is possible to create a map that draws only on those parts of the database needed to tackle a certain research question, or to show just the information needed in this case. This interactive element is based on the idea of map layers. On a base map that contains topographical features, thematic layers will be projected. These can show either points (settlements, toll stations, harbours, grain storages etc.) or lines (roads, borders, itineraries etc.) or geometries (areas of historic landcover or land use etc.).

Finally, one can analyse the data underlying the map using other methodological approaches: the data can be analysed either statistically (how much money is being allocated to a certain place by a trade company etc.) or in terms of time and space (how long does it take to get from one place to another etc.). While GIS is part of the toolbox of the geosciences, it has great potential to be the future database to store and analyse historical data that has either a temporal or spatial aspect or both (a so-called HGIS). For further reading see Gregory and Geddes (2014), Volkmann (2017) and Bodenhamer (2010).

See reviewed sample studies 18 (mapping) 39, 41 (mapping), 55.

Discourse Analysis (Martin Kypta)

The terms 'discourse analysis' or 'discourse theory' denote a wide range of theoretical and methodological approaches, from Habermas's normative notion of the 'force of the better argument' to critical discourse analysis in linguistics. The German tradition of conceptual history (*Begriffsgeschichte*) highlights the effects of language on society and culture over the centuries. Roughly since the year 2000, an interdisciplinary approach of discourse analysis has become en vogue for historians. This strand of discourse analysis is well fitted to grasp social and political phenomena, since it aims at disclosing power mechanisms, which have determined actions. People, in this view, do not have power; rather, power lies in relations between 'partners', between the elements of discourse. Simply put, discourse itself inherits power by enabling or inhibiting statements, practices and positions. Discourse analysts scrutinise their sources by finding, highlighting and ordering recurring statements and practices, and by focusing on changes of those standard themes. Discourse analysis is positivistic in the sense that it is not hermeneutic. There is no search for an underlying meaning.

Discourse analysis rests on the assumption that there is no meaning before discourse. Only through discourse do things get meaning. Discourse is a practice rather than just a copy of an underlying reality. To many, the founding father of discourse theory is Michel Foucault. "We shall call discourse a group of statements in so far as they belong to the same discursive formation" (Foucault 1972, 117), which means they share a common regularity (an order, correlations, positions and functionings, transformations). To Foucault, it is important how knowledge comes into being, what can or cannot be said. In the narrow sense of the term, discourse theory "is a set of methodological rules for the analysis of text"

(Laclau in Bhaskar 2002, 79). It is important to note that discourse theory is still a work in progress. Theory and method consist of an ongoing openness and variety. Thus, almost every work of discourse analysis is itself in part an extrapolation of discourse theory. Still, there are basic steps any discourse analysis has to take. In the following, those steps are condensed to three (Füssel and Neu 2014).

The first step is to choose a set of texts that comprise a corpus. This task is obviously guided by a main theme or research question and, thus, is subject to changes during the course of the work. Since the chosen sources determine the outcome of the analysis, this step has to be made as transparent as possible.

The second step is to analyse how statements in the chosen corpus come about and how they are used: Are there recurring themes? Do certain statements appear only in a specific set of texts, for example at a certain time? Are there important changes over time or between certain groups of text? This step is already guided by theoretical considerations that might help to structure the findings. There are different ways to perform this step including more quantitative methods, such as counting the frequency of occurrence of selected words. There is a number of specially designed software programs to do so, such as MAXQDA.

The third step draws from the findings and brings in the aspect of power. The corpus is put into context, and the findings are put on a more general level. Could history have happened otherwise? Did the discursive formation favour a certain reality, a social or political position? How did those formations come about? What made the changes or differences possible or impossible?

Written text comprises the main source of discourse analysis. However, there are theoretical approaches (e.g. Laclau and Mouffe 2001) and a growing variety of empirical studies that focus on a broader notion of text. The analysis of pictures, symbols, gestures, layout and so on are also supported by discourse analysis.

Discourse analysis is a text-based business. However, analysing the formation of text could also be made visual by graphics or the like (see e.g. Nonhoff 2019).

Individuals are, theoretically, less of a focal point in discourse analysis than they are in other approaches. Rather, individuals occupy so-called subject positions. They are part of discourse like any other element of it. However, they often serve as nodal points where several elements of discourse come together.

Due to its focus on disclosing power relations, discourse theory is often deemed a necessarily critical business. This judgement implies that transparency and a better understanding of how things work always is of a corrosive nature. Historians therefore sometimes opt to perform only the first two of the three steps outlined above and refrain from the question how discourse shaped power relations. For further reading see Angermüller et al. (2014) and Landwehr (2008).

See reviewed sample studies 14, 31, 33, 67.

Game Theory (Ulf Christian Ewert)

Game theory is about behavioural choices people make under the conditions of cooperation and conflict. In particular, this mathematical concept goes back to the research on strategic decision-making by John von Neumann, Oskar Morgenstern and John F. Nash in the 1940s. In economics, an early field of application, the asymmetric but stable division of a market by two firms (a so-called dyopol) was treated extensively with game-theoretical models. Since the 1980s at the latest, game-theoretical reasoning has become a standard methodology in the analysis of many theoretical problems in economics. Yet, in premodern economic and social history, we find only a small number of applications (e.g. Greif 1993, 2000, 2002; Greif et al. 1994; Volckart 2004; Lehmann 2004; Ewert 2007, 2008, 2009; Hirschbiegel and Ewert 2013; Ewert and Selzer 2016).

Game theory—like other economic-theoretical approaches—rests on the assumption that rational agents seek to maximise their own utility. However, rationality can be bounded to some extent, since agents may have only limited information at their disposal. And in contrast to economic models of pure utility maximisation, agents in game-theoretical models behave strategically. They take into account that actions they expect of other agents might have an impact on their own decision-making. Thus, in game theory, the classic *homo economicus* is also a *homo sociologicus*, at least in some respect.

The objective of game-theoretical modelling is first to detect and then to analyse equilibria of action. These insights are used to explain dilemmata of action that may arise. In the process, a real-world (historical) problem is transformed into a suitable game, and subsequently the mechanism of this game is carefully examined. Examination includes a derivation of the 'optimal' choices for each agent involved in the game. Such prediction serves as a measure for the evaluation of the (historically) observed choices and actions of agents. Within game theory, different approaches and types of games are distinguished: descriptive vs. predictive approaches; cooperative vs. non-cooperative games; static vs. dynamic games; one-period games vs. repeated games; simultaneous games vs. sequential games.

Matrix games are game-theoretical models in which possible strategy combinations of all players and utility levels associated to them are displayed in matrix form. This matrix is called pay-off matrix. Games depicted in this way are so-called one-shot games—in other words, such games are basically played for one round only. It is assumed that all players make their strategy choices simultaneously. Although not strictly necessary, the number of players and number of strategy choices is very often limited to two. This is primarily because fundamental problems of cooperation are to be made clear, and a reduced model seems to be able to perform better than a complex one. Basically, such two-player games can always be generalised to *n* players and to a larger choice of strategies.

Presumably the most popular and best-known matrix game is the so-called prisoners dilemma' game (Kreps 1990). In using its n-player variant, it can be proved that economic cartels are notoriously instable and constantly prone to disband. All players have to choose simultaneously whether they would like to cooperate or whether they want to defect. In a one-shot game and under common behavioural assumptions—that is, utility maximisation and risk avoidance of players—and without any third-party enforcement, rational players will always choose 'defection', despite the fact that for each of them the individual net-benefit of cooperation is greater than zero and also the aggregate return of all players would be greater if all of them cooperated. To defect is nonetheless rational, because players are eager to avoid the risk of bearing the costs of cooperation alone, whereas all others could free-ride on this particular investment in cooperation and would thus gain the full possible return without bearing any share of cooperation costs. As a result, the likelihood of a cartel being formed is zero.

However, a more realistic approach to model cooperation is to use a repeated-game approach. In an infinite 'prisoners' dilemma' game, players would have the opportunity to acquire a reputation and to build up mutual trust over time. Reputation and trust both are instrumental to the stability of cooperation, inasmuch as in the long run, the cooperation strategy can be successful, even if it might cause short-term loss of utility (Axelrod 1984). A decisive factor here is the number of players. In a game with numerous players, it is not only harder to build up mutual trust, but each player might also think that his personal contribution to the cartel is more or less dispensable—the cartel will work effectively even without his participation—and might decide to defect.

Historical research often deals with specific actions of historical individuals or organisations. And it is often about deciding whether an action was appropriate or inappropriate, reasonable or less useful. Game theory can be quite helpful in the evaluation of the behaviour of individuals in the past, because it is able to explain why rational agents, under certain circumstances, are not willing to commit themselves to cooperation and are opting for conflict instead. Game-theoretical analysis is also able to identify those institutions which would be necessary to guarantee fruitful cooperation of rational agents. In this respect, it contributes a lot to the understanding of the manifold problems related to collective goods. This is particularly useful for the analysis of medieval long-distance trade or the provision, maintenance and management of public goods and common-pool resources in medieval agriculture as well as in the medieval town. For further reading see Axelrod (1984), Kreps (1990) and Bates et al. (1998).

See reviewed sample studies 4, 19.

Hypothesis Testing (Ulf Christian Ewert)

A hypothesis can stand at the beginning or at the end of a historical study. Historians either analyse their data (the sources) and then build a hypothesis (inductive reasoning), or they propose a hypothesis, based on theory or coming from the literature, and then go on to check if the empirical data confirms or rejects the hypothesis (deductive reasoning). The latter case can be called hypothesis testing in a very broad sense. Such an approach first states the hypothesis (or a number of hypotheses) and then outlines why this hypothesis seems plausible, either from a theoretical perspective or because recent research suggests as much. Secondly, criteria for rejection of the hypothesis are determined. Thirdly, the empirical data (the sources) is checked: Does the hypothesis fail in the light of the available data? If yes, it has to be rejected. If not, the hypothesis can momentarily be accepted, but would have to be refined in order to be tested once again. Thus, a 'new' hypothesis can be proposed which can be checked by analysing more or different data.

The term 'hypothesis testing', however, often has a narrower meaning and refers to a very standardised procedure: Statistical hypothesis testing. A wide range of the statistical properties of empirical data is expressed in various descriptive statistics like sample mean, variance, coefficient of variation (ratio of standard deviation to mean) or range (difference between maximum and minimum). To check the precision and reliability of such measures, statistical hypothesis testing is necessary. Under the assumption that the values observed are realisations of identically and independently distributed random variables, statistical tests can reveal—with a certain probability of error—whether the obtained estimates of descriptive statistics are random or not.

A typical strategy is to test an alternative hypothesis (H1) against the so-called null hypothesis (H0). Commonly, it is tested (a) if a sample mean differs from zero, (b) if sample means of several subsamples deviate from each other, (c) if estimated regression coefficients differ from zero or (d) if they are greater or smaller than a given value derived from theory. Relevant information for the decision to either reject or to accept the null hypothesis is given by the test statistic—this is the estimate itself, but normalised by its variance—and by the probability of error α. The probability of error indicates how likely it is to reject the null hypothesis as false, even though it is true (type I error). The null hypothesis should be rejected whenever α is small. By convention, this is the case for $\alpha < 0.1$, $\alpha < 0.05$ or $\alpha < 0.01$. Critical values of the test statistic can be obtained from statistical tables. However, this sort of conventional approach which uses printed tables is no longer necessary nowadays, because various test procedures are implemented in the available statistics and econometrics software, and the respective computer program automatically calculates the critical probability of error for which the null hypothesis would have to be rejected with the given empirical data.

A serious problem that may arise within the testing procedure is the fact that most statistical tests are constructed in such a way that the type I error will be at a minimum. However, it can be shown that minimisation of the type I error often also implies an increase in the concomitant type II error. A type II error occurs when the null hypothesis H0 is false but cannot be rejected as such. As a consequence, the true alternative hypothesis H1 will not be accepted. One also has to keep in mind that reliable information from statistical tests can only be obtained if the empirical data are a result of sampling. Therefore, assuming that observed values are realisations of identically and independently distributed random variables may cause a methodological problem when applied to historical data, because for most historiographical applications where statistical methods are used, the random character of observations can be doubted. For further reading see Johnston ([3]1984) and Feinstein and Thomas (2002).

See reviewed sample studies 24, 30, 35, 36, 43.

Institutional Analysis (Ulf Christian Ewert)

A lot of different notions and definitions of the word ‘institution’ exist, and as a consequence, in different approaches to institutional analysis the focus is set differently. What is common to all definitions of institutions is the element of structure or mechanism within a society which creates social order and governs interactions. The widest and most flexible, and probably nowadays most influential, definition evolved from the analysis of Europe's premodern economic development and growth. According to Douglass C. North (1920–2015), who was an American economist and Nobel Laureate (in economics) of 1993, "Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction" (North 1990, 3). With regard to their contribution to society, he continues: "In consequence they structure incentives in human exchange, whether political, social, or economic." Such a definition allows for including formal rules such as constitutions, laws and property rights as well as informal rules such as sanctions, customs, traditions or taboos.

Institutional analysis then tries to reveal in a systematic manner the behavioural incentives created by a single rule or a set of rules, a so-called institutional arrangement. Furthermore, institutional analysis aims at understanding whether a given rule or an institutional arrangement is able to either enhance or inhibit a certain behaviour of individuals, for example to engage in exchange or to cooperate with each other. This methodological concept is extremely important for historical research because (in the words of North) "Institutional change shapes the way societies evolve through time and hence is the key to understanding historical change" (North 1990, 3).

In this sense, institutional analysis is closely related to *New Institutional Economics* (NIE), a now widespread approach in economics which became popular in the 1970s. In particular, NIE questions a number of assumptions traditionally made in neoclassical economic theory about individual behaviour and economic exchange, for example that market entry is priceless for users, that market participants are fully informed about market developments and intentions of potential trade partners, and that property rights are well defined. Under these neoclassical assumptions, exchange can be handled without costs.

However, in the light of empirical research, the neoclassical model of economic exchange turned out to be unrealistic and even misleading for understanding economic transactions. Markets are usually imperfect; property rights are often only incompletely specified, and individuals only possess limited information on what is going on at the market.

Therefore, NIE sees the market itself as an institution, which can be designed in different ways, and points to the fact that property rights may have an impact on both decision-making and economic action of individuals. Moreover, transaction costs—these are all costs necessary for operating economic exchange including costs of information, transportation and contracting—are extremely important. If transaction costs are (too) high, it is fully rational for individuals to refrain from using the markets. Finally, the incomplete information of market participants and the information asymmetry between them both cause bounded rationality, which means that in principle individuals take rational decisions, but only within the boundaries of their actual and usually incomplete knowledge. Thus, a standard scheme in institutional analysis is to identify property rights and boundaries of information, and to assess whether under these conditions a given rule (or a set of rules) is able to lower transaction costs significantly.

North's seminal argument regarding the determination of Europe's unprecedented economic take-off since the Middle Ages points precisely to these steps in institutional analysis. For North this tremendous take-off was mainly due to the development of efficient institutions, at least in the long run. He states that Europeans were successful especially because they created or adopted institutions with well-defined and often exclusive property rights. Thus, information asymmetries and transaction costs were reduced, which enhanced entrepreneurial aspirations and facilitated market exchange.

However, assessing the capacity of institutions to reduce transaction costs is only one aspect of institutional analysis. One can also investigate the reasons why institutions often keep being used although they have become inefficient and obsolete. This phenomenon is called lock-in. It shows a path dependence of institutional development and underlines that institutional development is always bound to specific historical contingencies, which often cannot be made inoperative by the decision-making of later generations (Arthur 1989; David 1994). A third aspect of interest lies in the enforcement of institutions: In general, third-party enforcement and self-enforcing institutions are distinguished. A 'third party' (e.g. a court) can guarantee that a given rule will be observed, but institutions can also be designed so that a third-party enforcement is not necessary. Self-enforcing institutions usually create strong incentives for individuals to deliberately negotiate a fair solution. So even in a kind of social worst-case scenario with purely selfish people, cooperation would nonetheless be in the best interest of all the parties involved.

Since studies that assess self-enforcing institutions mainly focus on the specific conditions that bring supposedly conflicting strategies of individuals into coordination, we often find game-theoretical approaches in this strand of institutional analysis (Greif 2000) (see section on game theory). Interestingly, the huge impact that different enforcement schemes may have on exchange, development and growth has been demonstrated in economics since the early 1990s by using a medieval case, the so-called Commercial Revolution of the Middle Ages, when long-distance trade in Europe was re-established (Greif 1992). North's argument regarding the significant reduction in transaction costs through a clever institutional design as being the main driving force of Europe's economic take-off was modified to say that especially self-enforcing institutions contributed to the enormous economic growth of premodern Europe: Contracting was facilitated by doing it without the costly means of public third-party enforcement but relying instead on the cheaper private means of reputation, credibility and trust (Greif 2006). However, this statement has recently been challenged by pointing to the fact that medieval trade—and impersonal exchange by that time in general—grew immensely as a result of the wide development of law-based (i.e. third-party) institutions, as can be seen for example in the common law protection of medieval fairs (Munro 2001; Edwards and Ogilvie 2011, 2012). For further reading see David (1994), Edwards and Ogilvie (2012) and North (1991).

See reviewed sample studies 4, 9, 11, 19, 23, 24, 27, 30, 34, 35, 49.

Metal Analysis (Sebastian Steinbach)

The physical and chemical analysis of coins can be used to specify the precious metal content of one object as well as the alloy (mixture of metals) or even the deposit of the ore by analysing the trace elements. This analysis is useful to get information about where the metal used for minting came from. Common methods can be divided in destructive and non-destructive groups: Destructive ones are, for example, the touchstone (assaying tool) or wet chemical methods (melt down). Non-destructive methods are, for example, the determination of the specific weight or the X-ray fluorescence analysis (XRF).

Using metal analysis, differences between the real metal content of one coin and the fine weight specified in mint master contracts or minting ordinances can be detected to get information about the possible discrepancy between 'virtual coins' as described in the written sources and 'real coins' in circulation. To get a more reliable database, a larger amount of coins of one type has to be analysed with (in the best case) different methods and compared to each other. The more elaborate the method, the more detailed are the results: A touchstone can only give an approximation of the precious metal content while the X-ray fluorescence analysis provides detailed quantities of all metals contained within one alloy. For further reading see Metcalf and Oddy (1980–1988) and Metcalf and Hall (1972).

See reviewed sample study 54.

Micro-exemplary Method (Ulla Kypta)

The micro-exemplary method is a two-step procedure: First, you thoroughly study a comprehensive data set of a small community. Second, you check the reliability and the representativeness of the findings by comparing your own results with the results of studies that have analysed a similar phenomenon at a different time or place. The micro-exemplary method thus combines a qualitative study as the first step with a quantitative check as the second step. It rests on the assumption that past societies can only be understood in full if one uses quantitative as well as qualitative approaches: Only the first one can help us to comprehend the processes and interactions in a community, and only the second one can enable us to see whether these processes and interactions were part of larger processes that cannot only be found in this smaller community. The two steps together thus pave the way for broader issues such as the origin of certain processes or their long-term consequences.

The first step is a historical analysis (see section on source interpret ation/hermeneutics). Reading as many sources as possible, the historian paints a picture of a certain aspect of a small community. The more sources she reads, the better she understands what was happening in this society. To describe these processes, the historian does not use abstract concepts from today's scientific language, but constructs categories that are as close to the sources as possible. In this way ideally, a complete, hermeneutic, qualitative picture of the society in question emerges. In the second step, the historian tests this picture against quantitative data derived from other, similar studies. The quantitative check tests the representativeness and robustness of the findings. It can but does not necessarily have to be done by using descriptive statistics or regression analysis (see entries on descriptive statistics and regression analysis). In contrast to purely quantitative approaches, the micro-exemplary method does not regard the quantitative results as superseding the qualitative result. If both do not fit together, both have to be checked. This two-step procedure aims at creating a system of empirically sound concepts, a proto-theory. It is, however, an open-ended process that does normally not come to one final conclusion.

To employ the micro-exemplary method, you first need a comprehensive data set from a smaller community, which should encompass not more than roughly 5,000 members, since it is difficult to employ a thorough analysis of the connections between more than 5,000 members. For the second step, you need robust and reliable results of other studies to compare her own findings with. The results are normally presented as a narration, but connections between members of a community can also be expressed as a graph. For further reading see Carus and Ogilvie (2009).

See reviewed sample studies 9, 10, 31, 38, 48, 60, 61.

Microhistory (Tanja Skambraks)

Microhistory denotes not a complex methodology, but rather an approach which historians choose when they want to study a certain, well-defined entity, namely one individual case, for instance, a certain place, a certain community or person, or a specific time slot. Opting for this approach can result from two motivations: It can be the result of a pragmatic decision: Due to the limited availability of source material and/or time, one compiles a locally, temporary and thematically limited case study. This case study has to be representative, at least to a certain degree, regarding a total phenomenon (see section on source interpretation/hermeneutics).

One advantage of this approach is the simplification of the research process by reducing the often vast amount of source material—by picking out single cases. Many historical studies are micro-studies without explicitly saying so. The problem remains the possibility of generalising the results. Again, comparison with other findings and studies is necessary.

The second motivation to do microhistory is that some historians—namely from the French Annales and their followers—deliberately used and developed this approach (micro histoire) to create a specific new way of historical research which follows a different strand of narration interested in the everyday life of the lower classes, the individual, village culture and most important: mentalities. Thereby new themes have evolved and entered the sphere of social and cultural history. These approaches might also contribute widely to a new perspective on economic history. For further reading see Walter (2008), Le Roy Ladurie (1991) and Ginzburg (1980).

See reviewed sample studies 1, 5, 6, 13, 25, 29, 32, 37, 43, 50, 56, 58, 63, 65, 68.

Modelling (Ulla Kypta)

In a scientific context, a model shows one small aspect of reality. By concentrating on this particular aspect, we are able to come to terms with. As Morgan puts it, “each [model] depicts, renders, denotes, or in some way provides, some kind of representation of ideas about some aspects of the economy” (Morgan 2012, 13). If we work with a model, we better understand the aspect of the world represented in the model, and this enables us to better understand the world of which this aspect is a part.

The basic assumption at the heart of modelling, hence, is that you can get a better grasp of a phenomenon by taking it out of its context and putting it into an abstract model. Without abstraction, Hatcher and Bailey claim, you are sure to get lost in the ocean of facts: "The sheer size and complexity of the major processes of economic and social change mean that historians cannot hope to describe, analyse, and explain them by the gathering and narrating of factual information alone" (Hatcher and Bailey 2001, 4). Historians thus need to systematise the empirical data they are dealing with, be it price lists or narrative accounts of famines. They need to search for patterns, for common themes, for repeated events. If they describe such a pattern, common theme or repeated event on an abstract level, they are building a model.

Modelling can be seen as a two-stage process: First, you build a model, and second, you work with it or test it. The first step consists of choosing the one aspect you want to study in detail, and then phrase it in abstract terms. This can be done using mathematical language, but this is not necessary. Morgan lists four ways of how economists build a model. All four ways also work in economic history (Morgan 2012, 21–23):

1. Recipe-making—You put together ingredients such as "different ideas, intuitions and bits of knowledge of how the economy works", and hope that something new will come out of it, for example, a better understanding of how all the parts work together.
2. Visualising—You find a powerful image to describe how some aspects of the economy work.
3. Idealising—You pick out the relation that interests you, isolate it from the disturbances of the real world and study it in an ideal form (see section on classification/types).
4. Choosing analogies—You recognise similarities in the "form, structure, content or properties between two fields and investigate these similarities in a systematic way".

Once the model is built, there follows the second step of modelling: working with the model, that is, seeing how the ingredients of the model work together, how different inputs produce different outputs, determining how relevant the different factors are for producing a certain outcome and so on. By working with the model, you thus explore, test and refine your ideas about the workings of the economy. You can, of course, also work with or test a model that you have not built yourself. The most prominent examples in economic history are the model of population and resources by Thomas Malthus and David Ricardo, the model of class power and property relations by Karl Marx, and the model of commercialisation and markets by Adam Smith (Hatcher and Bailey 2001).

To construct some abstract ideas about the workings of the economy, you need to have enough examples so that you can find patterns and similarities. It is difficult to judge whether a similar pattern occurs in different cases if your research is based on only two test cases (see section on classification). Nevertheless, regardless of how many cases you investigate, a model never gives you an accurate picture of the world. The whole point of a model is to abstract from real-life disturbances and focus on one or few aspects. Thus, the main problem of modelling is to gauge whether what the model tells you about the aspect you are investigating does tell you anything about the real world, too. Models can be put into mathematical equations, graphical expressions, or simply be described in words. For further reading see Morgan (2012).

See reviewed sample studies 15, 24, 43, 45, 51.

Network Analysis: Social Network Analysis (SNA) and its Derivative, Historical Network Research (HNR) (Benjamin Hitz)

Since the 1990s and under the impression of Milgram's 'small world' experiment in the 1960s, the world has seen a boom of the term *network*. This leads Straus to see it as a possible paradigm of the twenty-first century (Straus 2010, 11). The first historian to refer to methods of social network analysis was Wolfgang Reinhard, who proposed the concept of entanglement (*Verflechtung*) as a translation of the term *network* (Reinhard 1979). This first introduction had little immediate effect, but network analysis has become popular in the last two decades (Lemercier 2012; Düring and Stark 2011; Düring et al. 2016).

SNA has its origins in quantitative methods and in graph theory (for an introduction to SNA Borgatti et al. 2013; Prell 2012; Jansen 2012).

Graphs are (mostly visual) representations of complex structures. In SNA, graphs are formed with actors (generally people, but not necessarily) as *nodes* and their relationships as *edges*. On the basis of such coding, SNA quantitatively analyses the totality of social relationships of a group of people delimited by some criteria. To constitute a sample of network data for analysis, one has to establish a dataset of sufficient density and completeness. In principle, SNA can be applied to all kinds of sources that meet these conditions. Typical sources are correspondence, court records (see section on court records), urban annuities (see section on annuities in Chap. 10) or prosopographic data (see section on prosopographic analysis). The material is then encoded and subsequently analysed using specific SNA software.

Despite the difficulties due to incomplete source material, SNA has been used in medieval history (see, e.g. Jullien 2013; Burkhardt 2009; van Doosselaere 2009; Selzer and Ewert 2010; as well as Chilosi et al. 2016). As distance encourages writing, some of the examples focus on geographically widespread commercial networks and public debts.

Depending on the research approach, SNA can examine various aspects: It can focus on the position of individuals in the network structure and thus try to find central, that is, important people. Or it can try to understand the underlying structure of the network by finding clusters and patterns or by identifying people in similar structural positions. SNA either examines entire networks, trying to analyse flow of information, network constellations or positions of people, or so-called ego networks (based on the relations of one person called ego), looking for explanations for certain behaviours or attitudes (Hennig and Stegbauer 2012, 8).

The kind of resource circulating within a network (e.g. money, information, 'friendship') determines the interpretation of individual network positions. In network theory, a difference is made between positively and negatively joined networks (Jansen 2012, 178). With regard to credit, for example, a network can be a resource (thus positively joined) when trying to find credit. But as credit relations can create dependency, it can also be useful to consider such a network as negatively joined: Having powerful partners in the network would then be seen as a disadvantage. On the other hand, Granovetter has shown that so-called weak ties (i.e. single ties to people outside one's usual social environment) can prove very important in certain situations (Granovetter 1973). Networks are not only interesting with regard to the flow of resources: Hennig and Kohl (2012), for example, established a connection between network theory and the concepts of habitus and capital by Bourdieu, showing how the network position can be used to analyse an actor's habits and opinions.

Network data can, but need not, be represented as a network chart, that is, a graphical representation of the network structures. Such representations can be very telling, but in case of large networks they cause confusion. Since formal network analysis is based on statistical methods of hypothesis testing (see section on hypothesis testing), network charts are not the only possible output: Tabular data or plain text is also within the range of possibilities.

While a growing number of historical studies are referring to SNA as a method, by far not all of them contain formal (i.e. quantitative) network analysis. But such metaphoric usage of network terminology can be fruitful too (see Bixler 2015, 54). Although SNA has certainly proved productive for understanding the social dimension in various contexts, some authors are critical of its applicability and usefulness for historical research (Burkhardt 2014 as well as Hitzbleck and Hübner 2014). Jahnke (2010, 189) laments the 'inflationary use' of network terminology, claiming that not all 'simple connections' between people can be called a network. For further reading see Borgatti et al. (2013), Burkhardt (2014) and van Doosselaere (2009).

See reviewed sample studies 16, 25, 31, 46, 55, 63.

New Economic History (Ulf Christian Ewert)

New Economic History (NEH) is the name of a specific approach to economic history that is, broadly speaking, characterised by its explicit use of economic theory and quantitative methods. Because of the latter, it is often also referred to as cliometrics. This approach was in fact 'new' around 1960 when the first seminal study in this methodological direction, the article of Conrad and Meyer (1958) on slavery in the antebellum South (of the United States), had just been published. With their analysis of the economic performance of the system of slavery in the

Southern states of the United States in the first half of the nineteenth century, Conrad and Meyer challenged an older view in American historiography on the Civil War (1861–1865). The older view was that this painful and bloody war would not have been necessary at all in order to at last abandon slavery, simply because slavery had, in economic terms, already become extremely inefficient on the eve of the war. Collecting data on cotton production and slave raising and testing the efficiency of the system of slavery in the context of an economic model, Conrad and Meyer came up with a different conclusion. They demonstrated that the antebellum South had developed into a geographically highly specialised system of production, in which the slaves were raised in the older and in agricultural terms less productive Southeastern states and cotton was grown in the newer Southwestern states, where the more productive soils were. Their analysis must not be understood as a justification of either the morally doubtful slave-holding society of the South or of the beginning of the war by the North, but Conrad and Meyer were able to show that, from an economic perspective, slavery was still a viable institution around 1860, showing no sign of dissolution whatsoever. Since then, the concept of NEH has been extremely influential in economic history, mainly in the English-speaking world. One of the main figures of NEH, Robert W. Fogel, who published a lot on the contribution of railways to nineteenth-century American economic growth and who initiated the anthropometric approach to the measurement of historical living standards, was elected as one of the Nobel laureates (in economics) of 1993. With the construction of so-called counterfactuals, Fogel also added a further component to the methodological tool box of NEH. For the quantitative assessment of the contribution of railways to economic growth in the United States during the nineteenth century, he compared the observed economic growth until the 1890s with aggregated growth rates he had obtained from a model assuming that overland transportation was operated not by railways, but with an alternative traffic infrastructure, namely with a system of canals. His results—railways were not the leading sector of American industrialisation and overall growth of the US economy turned out to be only a little higher than it had been without railways—challenged the American myth of the indispensability of the railway for the United States' becoming the largest and most dynamic economy of the world at the turn of the twentieth century. Fogel thus constructed an alternative (and in a way fictional) historical development of the US economy (a counterfactual), which he needed as a point of reference for the assessment of the historically observable economic growth (Fogel 1964). His approach of explicitly constructing counterfactuals can be fruitfully applied to every kind of economic history problem, since historians are always using counterfactuals for interpretation, even though usually they are not making their assumptions explicit. For further reading see Conrad and Meyer (1958), and Fogel (1964).

See entries on descriptive statistics, game theory, hypothesis testing, regression analysis, time series analysis and the reviewed sample studies listed there.

Prosopographic Analysis (Julia Bruch)

A prosopographic analysis focuses on a specific group of people. In a first step, all the information on the individual people in this group is gathered: One collects person-relevant data on the genealogy and biography of the individuals and classifies the data in terms of constitutional history and social history. Prosopography is thus closely related to genealogy and biographical analyses. The second step is to generate findings about general structures from the large amount of information. For example, von Heusinger 2009 prosopographically records the guild members in the city of Strasbourg in the thirteenth and fourteenth centuries as a group of persons. This leads her to make general statements about the functioning of premodern guilds and their activities in the cities. Both steps can be assisted by computer-based programs and databases.

In some cases, a researcher is not interested in the history of individuals, or it is not possible to find out detailed information on individual persons. The researcher can then employ a prosopographic analysis not of individuals, but of groups of people, and then analyse them in terms of kinship, neighbourhood, class, status or social rank. It is thus possible to analyse the environment, the social context and the significance of the group of people within society. Furthermore, prosopographic research analyses the development of a cohort in terms of time and place in the sense of analytical social history: Historians working prosopographically often research specific strata, classes, social ranks, groups of entrepreneurs or types of merchants. The question of whether a certain person (e.g. Jakob Fugger) was typical of his time is also often asked. In order to answer this question, the group of people to which the person belongs (e.g. merchants) must be examined.

A prosopographic analysis is often combined with a network analysis (see section on network analysis) to study the interconnections between the persons (Goetz 2014, 284f.; 355; Walter 2008, 43f.). This adds the connections between persons or groups as a further layer of analysis. For further reading see Bulst and Genêt (1986) and Eck (1993).

See reviewed sample studies 2, 7, 16, 25, 62.

Regression Analysis (Ulf Christian Ewert)

Regression analysis is the most important statistical technique used by empirical economists and more broadly by social scientists who are working with statistical methods. The use of regression analysis greatly increased amongst economic historians after the 1970s, in the wake of the 'cliometric revolution'. Arguably it has by now become part of the essential toolkit of the economic historian. It is rather demanding in terms of sample size: many observations are needed for its meaningful application. Unavoidably, this means that in medieval economic history the scope for its application is smaller than in modern economic history. Yet there have been several applications also in medieval economic history, for studying issues like market integration, standards of living, inequality, agricultural production, population growth, monetary policy and the cost of public borrowing, or courtly gift-giving.

Technically speaking, regression analysis is the appropriate method with which to model the (assumed) causal relationship between a dependent variable y and one or more independent (explanatory) variables x_i. The variable whose variation is focused on in the analysis is called the dependent variable. Regression analysis estimates how the dependent variable responds to changes in the value of each of the explanatory variables, keeping the values of the other explanatory variables included in the analysis constant. A regression analysis thus gives marginal effects of the explanatory variables. Focusing on just two variables at a time and neglecting the impact of other important variables may lead to incorrect inference. For example, the demand for grain in a late medieval town was of course determined by the grain price. Additional variables like prices of other foodstuffs and of manufactured goods, disposal of income, or the intensity of market regulation presumably affected the demand for grain as well. However, the marginal effect of a change in grain price on the quantity of demanded grain can only be estimated, if all other potential determinants of the demand variable are held constant (*ceteris paribus*).

The easiest and most common way of performing a regression analysis is to assume a linear model $y = \alpha + \beta_1 x_1 + \ldots + \beta_k x_k + \varepsilon$, where α is a constant, the β-coefficients represent the marginal effects of $i = 1, \ldots, k$ explanatory variables x_i on y, respectively, and ε is a random error term with zero mean and a constant variance σ^2. Data can either be cross-sectional data or be time series data (see section on time series analysis). By assumption, in such a linear multiple regression model, the variation of the dependent variable y is explained by the variation of the explanatory variables x_i. A model with only one explanatory variable is called single regression. If more than one regression equation is estimated, that is, two or more independent variables exist, one speaks of a multivariate regression or a linear regression system. For example, the grain price was affected by grain supplies to the market (the amount of grain available), and the harvest itself depended on the quality of soil (in the long run) and on seasonal weather conditions (in the short term). So one might also think about formulating a second regression model for grain supplies and a third regression model for quantities of harvested grain, both of which, together with the first one for demand of grain, would create a three-equation linear regression system.

To obtain estimates of the parameters α, $\beta_1, \ldots, \beta_k$ and σ^2 from the empirical data at hand, application of the *Ordinary Least Squares* (OLS) approach is the most popular. In this procedure, parameter estimates are chosen so that the sum of squared differences between the observed values of y and the estimated values of y will be minimised. According to statistical theory, this yields the best linear and unbiased parameter estimates. The coefficient of determination R^2 measures the share of variance explained by the independent variables x_i and allows for the evaluation of the relative fit of different specifications of the regression model. Whether a single explanatory variable x_i, or all of them together, have an impact on the dependent variable y can be tested using the standard procedures of statistical hypothesis testing. Usually, one would test whether a certain estimate of β_i is zero (H0) or deviates systematically from zero (H1). For the example of demand for grain in late medieval towns, regression analysis allows the testing of several hypotheses concerning the economic characteristics of grain. According to microeconomic theory, grain usually is a normal good. One would expect the demand for grain to be reduced if the price of grain rises and vice versa, to be increased with the falling price. However, under certain circumstances (e.g. in times of scarcity and dearth) grain becomes a so-called Giffen good, and as a consequence, people will increase their demand for grain, even though the price is rising.

Statistical problems that may arise in regression analysis can be multicollinearity (bivariate correlations between independent variables x_i are too big), heteroskedasticity (the variance σ^2 is not constant for all i and varies systematically instead) and autocorrelation (in a time series, the error term ε systematically depends on the error term in preceding periods). If not taken into account, such problems cause biased and unreliable parameter estimates, but there exist a wide range of statistical tests to check the appropriateness of the data, and usually such statistical problems can be solved by mathematical transformations of inappropriate data. However, as economic historians are increasingly emphasising, regression analysis only permits robust causal claims under a set of rather restrictive conditions. Two conditions that are particularly hard to meet are the exclusion restriction (there is no omitted variable that is associated with one or more of the explanatory variables that influence the dependent variable) and the absence of reverse causality (changes in the dependent variable must have no effect on any of the explanatory variables). Another serious problem in the latter respect is the underlying assumption of causality between variables y and x_i. This assumption cannot be proven with the regression procedure. Parameter estimates and statistical tests for the regression coefficients β_i can only reveal whether some causal effect of x_i on y could exist or not. To make causal relationships plausible, theoretical reasoning is needed. In consequence, in recent years much effort has been dedicated to developing ingenious research designs that explicitly take these limitations into account, using approaches like instrumental variables, difference-in-differences and regression discontinuity analysis. For further reading see Johnston ([3]1984) and Feinstein and Thomas (2002).

See reviewed sample studies 24, 30, 38, 45, 46, 51.

Source Interpretation/Hermeneutics (Tanja Skambraks)

> Erst durch intensive Quellenlektüre wird der Forscher mit den zu untersuchenden Verhältnissen näher vertraut, entwickelt dabei ein besseres Gespür für die Klassifikation von überlieferten Daten und Informationen, vertieft sein Vorverständnis für das historische Geschehen und erleichtert sich die Konzeptualisierung von Problemen. (Boelcke 1987, 93)

> It is only through intensive reading of the sources that the researcher becomes more familiar with the circumstances to be investigated, develops a better sense for the classification of traditional data and information, deepens his prior understanding of historical events and facilitates the conceptualisation of problems. (own translation)

The basis of all source interpretation especially relevant for historians is hermeneutics. For this reason, this article will first explain the concept of hermeneutics and then describe the steps of source interpretation as a method of historical research on texts.

Hermeneutics (from the Greek word *hermeneus,* meaning 'translator') is both an epistemology and a method, and a closely connected source interpretation. Its aim is to understand the deeper, hidden meaning of a text, a work of art or literature, resting on the assumption that a finding resulting from the analysis of a single source or a single case can be generalised to a certain extent. Many historical studies on individual findings or a single source generalise in such a way, often without the authors explicitly reflecting their method, which often leads to critique from 'exact' scientists. Hermeneutics consider history as the totality of human actions in the past, that does not possess—similar to a literary text—*one* clear meaning and thus has to be translated and interpreted. Hence, the methods of historians (aiming at understanding the meaning of something) must differ from the methods of the positivist or exact sciences (aiming to explain a certain regularity of something) (Lorenz 1997, 91). Therefore, historians become translators of the remains of past cultures, given that they can bridge the gap between the past and the present by deciphering these leftovers. Dealing with these basic assumptions in connection with the rise of the natural sciences since the nineteenth century has led to a long tradition of self-reflection among historians trying to offer a concrete methodology based on hermeneutics. Here only three important examples of this development will be presented, simultaneously sketching phases in the dynamic discourse on hermeneutics from the nineteenth century until the 1970s. The German historian J.G. Droysen in his *Grundriss der Historik* (1868) first presented four methodological steps still very influential in German historiography: The first is called pragmatic interpretation, meaning the collection and external critique of the sources. The second (interpretation of conditions) seeks to recognise geographical, technical, material and mental features of a time influential on human activity. This is followed by the third step of psychological interpretation looking for peoples' motives and ideas. In the last step, called interpretation of ideas, historians analyse the Zeitgeist and its relation to humans. In contrast to the determinism of exact sciences (an event consecutively results from certain rule), human activities are *not* determined and are often influenced by contingency and individuality. Of course, that doesn't mean that history is all arbitrary, but it means that historians must strive for plausibility, not for truth. Furthermore, two models of explaining history emerge in hermeneutics: the intentional model explains human activity by looking at the intentions of the actors, and the second model—the narration—is in itself a way to make the meaning explicit. (The latter approach is a frequent feature of the reviewed sample studies presented in this book.) According to R. Collingwood (cit. Lorenz 1997, 97–99), the prerequisite for this level of understanding lies in the closeness or similarity between the objects studied (human beings) and the subjects studying (human beings), enabling the latter to comprehend and put themselves in the other persons' place. Of course, intersubjectivity cannot be achieved in this approach. The knowledge of an intention in the past can never be complete, neither can it be proven. There can be unintended side-effects of an action. Structuralists of the 1960s and 1970s, like Fernand Braudel, criticised the assumption of the role of the subject and its intentions in history. Instead, they view a network of people connected to each other in symbolic and social relations, in which people carry meaning determined by social structures and mentalities. This approach is still very influential in social and economic history.

In a further approach on hermeneutics, the philosopher Gadamer (1960) denied the possibility of understanding the original meaning of a text/the past at all. (Lorenz 1997, 147–150) Due to the insurmountable time lag, the original text (reality) is lost, and every interpretation is just a result of a heap of former interpretations. Gadamer calls this *Wirkungsgeschichte* ('history of reception'). Interpretation is in this view no epistemological category, but rather an ontological one—a form of being, which is always present. Consequently, any interpretation is based on an anticipation of meaning (Gadamer calls this prejudice, horizon stemming from tradition), leading to a synthesis of the horizon of the text and the interpreters' horizons. The projection of meaning onto an object by the interpreters also traps them in the hermeneutic circle or spiral. This means that seeking to achieve a better understanding of a text or object leading to the development of a new question, which then again needs to be solved by digging deeper, bringing about new questions and so it is in principle an endless process. At the end of this view lies the hypothesis that there is no progress brought by an interpretation. All interpretations are just different views connected to their own time.

The element of objectivity—in comparison to natural science—is of course hard to define in this context, since we cannot prove whether our interpretation is right or not. But it is important to keep in mind that all historical interpretation is a preliminary and variant reading. Nevertheless, to what extent an interpretation is solid or convincing also relies on the density and quality of the data historians have collected to achieve their results. Working with parallel source material and making comparisons are valuable ways of enhancement. For further reading see Lorenz (1997) and Walter (2008).

Based on hermeneutics as a theoretical frame is the interpretation of a source aiming at the understanding of a certain historical phenomenon. To do this, there are two main steps: The first is called the critique of the sources, divided into outer and inner critique. These two first preliminary steps are followed by the actual interpretation. The formal or outer exploration of a source means identifying the type of source (e.g. charter, chronicle and account book) and its features. For analysing these outer features or materiality of the source, historians need to apply elementary or auxiliary disciplines like palaeography, diplomatics and heraldics. The important question is of course whether the source itself is authentic, allowing for further judgment on its credibility or trustworthiness.

The second step is the inner critique dealing with the informative value of the text. Historians have to apply the following questions: *when* and *where* the source was produced, *who* might be identified as the author/maker, the *main topic* of the source and the *reason* and *techniques* and *style* of its production. These questions aim at finding out more about the circumstances of its production, the intention of its creators/authors and their social, political and educative background. Therefore, reading a lot of secondary literature is indispensable. Inner critique of a text means to identify the keywords and main points in the text, trying to find out whether they are reliable, contradictory, wrong or incomplete. Next, one has to classify the type and style of content, that is, does the author report certain facts or events, does she utter an opinion, does she make judgements? Are there stylistic features typical of a certain genre or time, like certain topoi, tropes or rhetoric figures? Analysing these factors might help understand the values and perspectives of the author, to draw conclusions concerning his motives and intentions. By these preparatory steps, the researcher should be enabled to better interpret the text. The third step is the core of source interpretation consisting in a short summary of the content, that is, what is being told in the text. This analysis critically regards 'facts' as well as verdicts or tendencies in the authors' statements. Then follows the contextualisation, that is, whether and how a text fits in a historical context and the final conclusion regarding the research question(s). Obviously, the number of hermeneutically analysed sources is decisive for the depth of understanding of a certain historical problem or for answering a certain question. Thus, a comparison with other sources concerning the same topic might be fruitful and is recommended (see section on comparison). This leads to an overall interpretation of the source in its historical context and to a judgement concerning its usefulness to answer questions about the past. The method of source interpretation closely resembles some newer methodological approaches in studies of literature, namely close text reading or reading against the grain: All aim at unearthing the different layers of meaning of a text by closely scrutinising different aspects of the text as well as its context. For further reading see Rohr (2015), Pandel (2000) and Rössner (2017).

See reviewed sample studies 1, 2, 3, 7, 8, 10, 12, 13, 14, 15, 17, 22, 23, 26, 33, 34, 38, 40, 42, 44, 47, 49, 50, 52, 53, 58, 59, 62, 63, 65, 66, 67, 68.

Source Presentation/Edition (Julia Bruch)

A large part of a historian's work consists in unearthing sources. Editing and presenting the sources makes them accessible for other researchers and provides them with new evidence and data. In the reviewed sample studies, in many cases, there is no edition in the classical sense to be found, but the presentation of particularly relevant or difficult-to-access sources. In German historiography in the nineteenth century, Karl Lachmann developed some distinctive rules for compiling a historical–critical edition (*kritische Edition*). The aim was to identify or (re-)construct the original text from the existing manuscripts. For this type of edition, all steps the editor undertakes should be comprehensible; for example, all the manuscripts which were used to compile the edition should be cited, and the reader should be able to recognise which part of the edited version stems from which manuscript (see further Goetz 2014). Not all editors stick to these strict rules, but the so-called historical-critical presentation of sources still counts as the gold standard of editions in Germany (Sahle 2008). The most important collection of editions that set this standard is the *Monumenta Germaniae Historica* (MGH). An edition or presentation of a source usually gives some basic information about the context in which the source was written and preserved. Thus, a source presentation provides a first and basic step of understanding and interpreting a source (see further von Seggern 2016).

At the same time, some economic–historical source presentations have been created in the style of excerpts; this form of presentation, also developed in the nineteenth century and popular for a long time, is at the same time an evaluation of the sources (see, e.g. Weiß 2003, 3–6). Important information for newer questions can be missing and in a historical–critical edition texts sometimes are constructed in a way in which they did not originally exist. Researchers with economic–historical questions cannot always work with this kind of edition. When using or creating a source presentation, it must be clear that this influences the evaluation. The edition guidelines should be considered and incorporated into the questions. For further reading, see Gall and Schieffer (1999).

Digital presentations are genuinely neither better nor worse than printed editions, but they have advantages in the design of the layout as well as in the provision of the originals. The text is more fluid and thus corresponds more closely to medieval bookkeeping than, for example, a printed edition, which can only ever document a status quo. For example, the digital edition of the account books of the city of Basel makes it possible to switch between a digitalised version of the handwritten page, a transcript and a basic evaluation using descriptive statistics (see section on descriptive statistics). For further reading on digital source presentation, see Sahle (2017).

See reviewed sample studies 1, 28, 29, 44, 52, 56, 66.

Time Series Analysis (Ulf Christian Ewert)

Whenever a set of observations of a variable is naturally ordered along the time axis, one speaks of a time series or time series data. Usually, observations are recorded at successive equally spaced points in time (e.g. days, months, years, decennials, centuries) which gives a sequence of discrete-time data. Time series analysis provides us with a bundle of methods to describe the statistical properties of a given series and to forecast its future development.

Within the classic approach of time series analysis, the basic assumption is made that any given series can be decomposed into a systematic and an irregular part. The systematic part consists of a mean (the long-run level of the series), a time trend (representing the growth rate) and one or more cyclical components (representing seasonal effects). The irregular component is a stochastic term which produces erratic (non-systematic) short-term volatility of the data. Smoothing of the series is a commonly used method to identify the components of its systematic part. For example, calculating a moving average filters the short-term volatility out of the series and highlights any existing medium-term or long-term development and/or cyclical movement of the series. If a time series does not exhibit a systematic behaviour and consists only of non-systematic short-term fluctuations, the series follows a so-called random walk. Furthermore, the series must be stationary, otherwise it is not possible to identify and to extract the components of its systemic part. A time series is called stationary if both its mean and variance are constant in the long run, and long-run growth is only due to a time trend that may exist. In contrast, non-stationarity of the series would imply a constant and irreversible growth of its mean over time. Whether a time series can be classified as stationary or non-stationary is usually tested by applying unit-root-tests to the data such as the *Augmented-Dickey-Fuller-Test* (ADF-Test). If a time series turns out to be non-stationary, stationarity of the series can usually be yielded by taking its first or second differences. Forecasting is used to estimate potential future values of a time series. A common assumption within forecasting is that a model which sufficiently fits the data of the past will also produce a good forecast of the future. In this respect, however, autocorrelation of the series can be an important issue. A series is autocorrelated if later observations systematically depend on former observations. Thus, autocorrelation typically guarantees very precise forecasts. Finally, time series analysis is not restricted to the analysis of a single series. Even more sophisticated statistical methods deal with the correlation of two or more time series or with the estimation of parameters in complex causal systems.

Time series analysis certainly is a powerful technique for economic and social historians to apply to time series data whenever these data are available. Identifying systematic and irregular parts of historical development or distinguishing level, trend and cyclical movement is obviously what historians should aim at. Forecasting can be performed with historical time series data *ex post* in order to evaluate the fit of such a time series model. However, some of the assumptions underlying the statistical technique might be in conflict with what is a common understanding of the nature of historical analysis and historical explanation. Autocorrelation is a good example: On the one hand, it shows the historical emergence of a series and thus can explain its development over time 'historically' (out of its own development in the past). On the other hand, nothing can be said about reasons for or determinants of this development, even though autocorrelation produces at any point in time precise estimates for the future. Therefore, to find out something about historical causation, analysis of historical time series data cannot be restricted to a single time series only. Another example would be the stochastic property of time series to be stationary, which for statistical reasons is a necessary precondition of such an analysis. Nonetheless, stationary in principle contradicts the idea of historical change and development, and this definitely makes clear that, from a historical perspective, structural breaks in a time series presumably are much more common than any irregular movement around a permanently constant mean. For further reading, see Pindyck and Rubinfeld ([4]1998) and Feinstein and Thomas (2002).

See reviewed sample studies 45, 46.

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10

Glossary of Sources

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Which Material to Study? Sources for Premodern Economic History

This glossary provides a concise overview of all the sources used in the reviewed sample studies (see Chaps. 6, 7 and 8). The variety of sources used in studies on premodern economy is large: historiographical texts, artefacts, archaeological sources, legal sources, administrative and business documents, as well as letters, theological texts and databases are among them, showing how close the economy is interconnected with all parts of society. In spite of the difficulty of combining the sources used in the reviewed sample studies into individual genres and systemising them, we decided to build a system to enhance the usefulness of our book. The introductory work by Goetz (2012) still prevails for the German-speaking historiography. Our system follows his structure as much as possible, although in Goetz's comprehensive work not all sources found in our reviewed sample studies are mentioned. In addition to Goetz, the work of Brauer (2013) was used, which discusses additional source genres. To facilitate the quick looking-up of keywords, the sources and source genres are arranged alphabetically under eight main categories. We have placed the individual source keywords into these main categories. They mirror account our approach to economic history and highlighting source genres that have proven to be particularly productive in the reviewed sample studies for economic history.

Not every singular source which is examined in the reviewed sample studies is described here. As a general rule, similar sources have been grouped into categories. Of these categories, only those are included in the glossary which occur in more than one reviewed sample study and which have a special relevance to economic history. Here like in the whole book it becomes clear that German-speaking economic history has a clear focus on the premodern town: Many of the sources were written in an urban context.

Each entry provides a concise definition of the respective type of source, as well as some generalised information on its form, structure and content. Each entry also summarises the sources' usefulness and value for research. In many cases, we also name edited examples, in order to help our readers to look for specific and informative source material if interested in certain types of sources. For further specification of how a specific source can be studied and which applications exist, you are invited to consult the linked reviewed sample studies.

Administrative Documents

Annuities (Letters–Ledgers–Urban Accounts) (Angela Huang)

Annuities (*Renten*) appear in many contexts. Annuities were sold for capital against an annual payment. Life annuities ended with the death of all stated beneficiaries. Perpetuities (*Ewigrenten*), at first perpetual, were normally redeemable and transferable. Annuities can be easily distinguished from other credit instruments (e.g. temporary loans) by the phrase that the seller "has sold and is selling in this letter" the capital given.

Annuities are mainly, but not exclusively, an urban phenomenon. They are mainly documented in the following source types:

1. As highly formalised annuity letters, stating the type of annuity, the seller, the buyer (often including information about his social status and origin), the capital and annual payment, the due date(s) of payments and occasionally the place of payment, sometimes the security given by the seller as well as the conditions for the redemption of the annuity. The letter concludes with a closing protocol ('eschatocol') confirming the contract, mentioning the seal given below and dating the contract.
2. In annuity ledgers, documenting the issuing of the contract and/or the contract history (cessions, redemptions and payments). The contract is either given in full text or abbreviated.
3. In urban accounts that normally list annuity sales as part of the extraordinary income, only giving very basic information, for example, the capital, the buyer, the amount and dates of the payout. Payments are listed in a separate section of the expenses.

The different sources documenting annuities have primarily been used to study social strata (information on buyers), urban households and public debts (in relation to annual urban income and expenses over time) and market integration (interest rates).

Annuity contracts can be employed in both qualitative and quantitative research. They can be used to analyse individual buyers in context with other sources, social groups, guilds or practices like endowments in microhistorical studies (see sections on micro-history and micro-exemplary method, Chap. 9). Time series of isolated information like interest rates or the origins of a buyer can be analysed by way of descriptive or analytical statistics, using geographic information systems (GIS) or tools for social network analysis (see respective entries in Chap. 9). However, the sources require the use of literature and further source material for contextualisation.

See reviewed sample studies 45, 46, 51, 57, 61.

Accounts

In the Middle Ages, accounts were kept by very different people, groups of people and organisations. Premodern accounts did not follow the logic of today's calculations and did mostly serve as memory aids or control mechanisms. Since accounts are a particularly fruitful source for economic history, they are discussed in special detail here. Moreover, accounts are regarded as highly reliable for research, since they record actual income and expenses. Accounts are sometimes already serially handed down in the Middle Ages. However, the loss rate is relatively high, especially for accounts which quickly lose their value. The calculations offer the opportunity to explore the economies of those who ran them. Moreover, questions of money and goods transactions can be investigated, thus scrutinising the way of doing business and conducting trade; it can be investigated how households were managed, and if the calculations were handed down serially, quantitative analyses may be possible. Also, accounts, depending on how they are created and structured, can provide data for prosopographic studies and network analyses.

See reviewed sample studies 2, 3, 9, 13, 14, 27, 68.

Customs Accounts (Angela Huang)

Customs accounts are central fiscal documents for research on commodity trade. They were compiled by different fiscal authorities, namely urban or royal, and for overland, river and overseas trade. Port customs accounts documenting overseas trade are probably the most studied type of customs accounts and of particular importance to the study of premodern trade as they are the only serial source on large-scale and long-distance commodity trade. Accounts documenting the different English customs, the Sound Toll of the Danish crown and the Pound Toll Books compiled by Hanse towns to finance common projects, allow us to quantify long-distance trade and to reconstruct main patterns of trade in terms of trade routes and commodities. Whereas the London Customs Accounts (https://www.hansischergeschichtsverein.de/london-customs-accounts, last accessed on 14 November 2018) and the Sound Toll Books (http://soundtoll.nl/index.

php/en/over-het-project/sonttol-registers, last accessed on 14 November 2018) have recently been made accessible online, quite a few port books, for example of Baltic towns, remain unedited (see Jahnke 1998).

Port customs accounts are either organised chronologically and/or by ports of origin/destination. They typically give the name of the skipper, list the owners or charterers of the goods, and furthermore give a more or less detailed account of the goods and their value and the customs paid. Less often the customs accounts state the port of origin or the destination—this is often derived from the composition of the goods on board of a ship.

An important restriction of port customs is that they are silent on land trade. Particularly for this type of account, it is crucial to understand the context of the imposition of the respective customs and the exact function of the accounts. Especially temporary duties, like the Hanse Pound Toll, are often levied due to political conflicts and therefore unsafe waters, circumstances that influence commodity flows and transaction costs. Certain commodities or groups of merchants were often exempted from customs. Some accounts only list the total value of the shipments, while others, like the London Customs Accounts, are very detailed when it comes to the commodities. Quite a few port books do not give dates for individual shipments, but only allow a rough chronology of the ingoing and outgoing traffic. The merchants listed in the accounts can often be either the owner or the charterer of the goods. Finally, it is next to impossible to estimate the degree to which smuggling took place.

See reviewed sample studies 36, 37.

Household Accounts (Tanja Skambraks)

Household accounts are pragmatic sources stemming from the context of household administration. Most of them survive from late medieval noble or bourgeois households, where stewards were in charge of documenting the income and expenses on a daily, weekly or monthly basis. The accounts were audited every year, mostly at Michaelmas (29 September). A huge amount of source material from England has been edited and studied, mostly with regard to living standards (Dyer 1989; Woolgar 1992, 1993) of the households of lower and higher nobility, as well as some bourgeois households. For late medieval and early modern German households, there are single case studies related to the questions of administration and representation (Fouquet 2014), mostly of noblemen. The accounts in an ideal form mention a date or week followed by the two categories 'income' and 'expenditure' and a daily or weekly sum spent or earned. Under those headings we find more subcategories, for instance, specific foodstuffs, luxury articles, wax, wages for household members, clothing, gifts received or given, travel expenses, expenses for horses and building work. The accounts inform us about the consumption patterns of a certain household leader and his *familia* allowing for a reconstruction of household organisation and administration techniques, personnel and its social structure. Household accounts are a valuable source for the study of living standards and the demesne economy on the one hand, but they are also highly informative on questions of everyday life, festive culture and social coherence. To make them as fruitful as possible, they should be studied in a comparative approach.

See reviewed sample studies 37, 42.

Merchants' Books (Ulla Kypta)

Medieval merchants kept a record of their business dealings by writing them down in their books. These books cannot be regarded as accounts in the modern sense of the word, but rather as an aide memoire. Merchants wrote down what they bought and sold, whom they lent money to and from whom they borrowed a sum, and what letters of exchange (see the respective keyword) they issued and accepted. Some books were written down chronologically, others were subdivided in thematic accounts, for instance into accounts for trade to a certain city or for the affairs of the societies the merchant was a part of. Chronological accounting notes were sometimes reworked into separate books, which gave an overview of, for example, all the debts or all the exchange transactions. A prominent example are the books of the Hanseatic merchant Hildebrand Veckinchusen (see Lesnikov 1973; Lesnikov et al. 2013; for other Hanseatic merchants see Mollwo 1901; Nirrnheim 1895; and for Ulrich Meltinger, a merchant from Southern Germany, see Steinbrink 2007). It was only very rarely that a merchant drew a balance for a subaccount or for a certain year of his business dealings, and double-entry bookkeeping was not widely known during premodern times. When larger trading companies emerged in Germany during the late fifteenth and early sixteenth centuries, more complex systems of accounting were employed to deal with the different branches (Geffcken and Häberlein 2014). Since merchants' books tell us about the goods, the partners and trading routes of a merchant, they can be scrutinised to study the variety and prices of commodities, networks of partners as well as networks of cities. But we cannot use the merchants' books to grasp the whole of a merchant's commercial activity, or to calculate his overall wins and losses, because no complete series of accounts from a single merchant or a trading company has survived up to today.

See reviewed sample studies 3, 8, 16, 17, 26, 37, 45, 59.

Monastery Accounts (Julia Bruch)

The composition of accounting books from premodern times is determined by the accounting organisation. Monastic accounts follow the logic of monastic organisation and generally record income and expenses of the entire monastery as well as individual monastic offices. The earliest monastic accounts from the German-speaking region have been handed down from the thirteenth century. The early ones are accounts written in coherent text flow. From the fourteenth century onwards the accounting books increasingly separate income and expenditure and draw up balance sheets.

The accounts rarely form a series of similar entries. Often the individual entries are not reliably created according to the same pattern, the income dates differ greatly or the entire monastic organisation was not recorded, which makes statistical or comparative evaluations more difficult. In addition, different currencies, dimensions and weights are often used, which does not make it easier to evaluate the accounts.

Monastery accounts are determined by the specific organisational form of the monastery or the religious order. Thus, the accounts also serve to control the individual monasteries and are forms of communication of power structures (see, e.g. the Kaisheimer accounting book Bruch 2013).

See reviewed sample studies 1, 27, 29, 43, 52.

Urban Accounts (Julia Bruch)

Urban administrations also kept accounts of various kinds, which are useful sources of urban economy. There, the municipal treasurer (e.g. *Rentmeister and Baumeister*—the source names differ), the scribe of the chamber or the town scribe wrote down income and expenditures of money and natural resources, depending on the administrative development of the town and its resources. The city's income mostly consisted of duties and taxes, such as from agricultural property, whereas the expenditures were often used for the fortification of the city, for the city officials, for mercenaries, the maintenance of infrastructure and so on. As a rule, the accounts do not show the entire city budget, but only cover subareas according to their own logic, which must be considered in the analysis. The difficulty with these sources lies in the fact that they have rarely been edited and that many treasures are dormant in the archives. Digital editions of these city accounts have proved to be particularly useful in recent years, such as the edition of the Basler city accounts (http://gams.uni-graz.at/context:srbas; last accessed on 9 November 2018) or the edition of the Augsburger Baumeisterbücher (https://www.augsburger-baumeisterbuecher.de/; last accessed on 9 November 2018). In both examples, not only serial sources have been handed down, but also edited as such, and the edition projects offer a connection to current discussions in digital humanities.

See reviewed sample studies 18, 21, 23, 27, 28, 34, 46, 61.

Inventories (Tanja Skambraks)

Inventories are lists of personal mobile and immobile belongings of private persons and institutions, like churches or manors, which were written down for various reasons. In the case of persons, these lists enabled the distribution of belongings after the person's death and thus prepared the post-mortem settling of debts and regulated inheritance. The information on the listed objects like household goods, books, silverware, jewellery, clothing, weapons or furniture can be very detailed—depending on the respective writer and household management. In some cases, the inventories were written post-mortem. Some list the objects' value in money, while others give detailed descriptions of their appearance and condition, thus pointing to the value their owners attributed to them (Smail 2016). Inventories by institutions—as memory tools—enabled members to control the community's belongings and treasures, relevant to preventing or detecting theft and fraud. In the case of manorial inventories naming livestock, agricultural equipment and buildings, they are closely connected to early medieval registers and land-rolls (*Urbar*).

From inventories, we can learn much about the types of objects people and communities possessed and considered as valuable, as well as their material value. We also learn about inheritance practices, since in some cases the possessors already named the heirs of specific objects, often household members, relatives and neighbours (Howell 2010). Thus, inventories are closely related to wills.

See reviewed sample studies 8, 14, 52.

Minutes of Town Meetings (Ulla Kypta)

The cooperation of towns constituted an important feature of the political landscape of the late medieval Holy Roman Empire. These cooperations could be formalised into proper leagues of towns such as the Rhenish League of Towns (*Rheinischer Städtebund*), which also included princes; or certain cities could agree to cooperate on defence or economic policy for a number of years, like Basel, Freiburg/Breisgau and Strasbourg, who renewed their agreement roughly every three years. Other towns met on a frequent, albeit not regular, basis without any contract underlying their cooperation, such as the Hanse towns. In many cases records of the meetings of these towns survive. Minutes from the meeting of Southern German towns are edited in *Die Urkunden und Akten der oberdeutschen Städtebünde vom 13. Jahrhundert bis 1549*, and the meetings of Northern German towns are provided in the Hanserezesse (accessible online: https://www.hansischergeschichtsverein.de/hanserecesse).

Towns discussed a number of issues concerning their economic policy: How to secure trading routes, how to stop pirates, how to make sure that coins kept their value, how to protect their citizens from lawsuits in other towns, how to make sure that customs would not reach a level at which trade would stop and so on. The records can also be analysed to study urban networks: Which cities cooperated, who was informed of the meetings?

The minutes of a meeting of towns, however, did not constitute binding laws. They had to be implemented into urban law, and not every city that attained the meeting automatically transformed the minutes into urban law.

See reviewed sample studies 26, 33.

Pawn Registers (Tanja Skambraks)

These sources, mostly surviving as bound paper manuscripts written in chronological order, stem from bookkeeping institutions or individuals. Italian examples show the double-entry system, that is, they state the act of pawning a pledge for money on one folio and its redemption on the opposite page. Besides the sums borrowed, we find the names or/and professions of the debtors involved in the transaction. Thus, pawn registers provide valuable information on the social background of minor economic actors. Firstly, pawn registers allow qualitative analysis of the actors involved as well as the materiality of pawnbroking. We learn about the numerical and ideal value attributed to certain objects—mostly everyday objects—as value storages.

Secondly, quantitative analysis in a long-term perspective is also possible, for instance, when we look at the numerical distribution of the different objects (which groups of objects were pawned often/rarely) and the development of pawnbroking activities over time, for example, during different seasons of the year or—even longer—over several decades.

Since these sources were written by and from the perspective of the creditor, pawn registers remain silent about the debtors' motivation and circumstances or the use of the money. Furthermore (and according to medieval church law), they also avoid stating the paid sums of interest, so that researchers have to use different sources, like statutes, to obtain relevant data.

See reviewed sample study 60.

Rural Registers (Julia Bruch)

In addition to accounts, premodern rural administration left registers (*Urbar*), which are closely linked to manorialism (*Grundherrschaft*), the predominant form of government in rural areas. These rural registers mainly dealt with the systematic recording of claims to property and taxes (*Abgaben*). In contrast to accounts, these contain claims, not actual incomes and expenses, whereby the boundary to accounts can be fluid. Registers of this kind were already known in the Early Middle Ages. Earlier German-speaking research distinguishes between these directories according to content criteria, like tax rolls (*Heberegister*), estate books (*Güterbücher*), stock books (*Lagerbücher*) or registers of the entire property (*Polyptychon*). Among researchers, it is controversial whether rural registers can be seen as records of social and economic facts and can thereby be statistically evaluated. In this case, they provide many possibilities for researching the system of manorialism in all its facets, including social groups that rarely appear in the sources, such as the unfree. Other researchers understand these registers as purely normative sources and thus examine only the claims, not the actual administration. Nevertheless, they provide insights into rural administrative practice, into the relationship between the individual actors in manorialism, into ownership structures, types of taxes and the use of the written word in rural administration, and are an indispensable source for agricultural history (Goetz 2012, 176–183; Brauer 2013, 45–51).

See reviewed sample study 5.

Urban Administrative Sources (Julia Bruch)

Similar to today, the administration of a late medieval town produced a large number of written records besides urban accounts. Those administrative documents are usually distinguished according to their content into, for instance, tax lists, asset lists, house lists and citizen's books. These sources can be used to analyse questions about taxation and ownership, stratification of the population, analyses of names and so on. It should be borne in mind that in most of these sources only certain parts of the population are mentioned (Goetz 2012, 183–185). I would like to draw particular attention to the city books, because this source group is very common and because it makes up a large part of the tradition. The term 'city book' is a collective term for books from premodern cities and towns, which can contain all kinds of sources written in an urban administrative context. These are primarily urban law (*Stadtrecht*), urban orders, urban accounts, council records, court minutes, urban certificates, important charters, partly narrative sources, chronicle news, to name only the most important. Like in chronicles, a whole series of information can be combined here; the books must be read carefully. They represent the perspective of the urban council and its administration. They are especially useful for research on the urban economic order; for example trade fair orders and market orders, and regulation of taxation. In addition, transfers of properties might be recorded in city books (for example the Cologne *Schreinsbücher*) as well, which among other things allow insights into ownership and property distribution. Also, purchase transactions taken up there are of special interest for economic history. Now and then one finds price lists or within the council minutes court judgements. The source type is hence also of importance for qualitative questions. There is a digital directory of all premodern city books for the German-speaking areas, which greatly facilitates research on this source type (Goetz 2012, 184–185; https://www.stadtbuecher.de/).

See reviewed sample studies 2, 3, 7, 8, 10, 15, 16, 25, 26, 31, 34, 35, 46, 68.

Tax Lists (Ulf Christian Ewert)

In the late medieval town taxes were raised, typically on the wealth of citizens. Tax payment was recorded, and for numerous towns and cities in Germany tax lists have survived. However, the entries in such lists only encompass those inhabitants of the town who owned certain assets and had a certain (usually larger) amount of wealth. This is because the duty to pay taxes in medieval towns was based on wealth and assets, not on income as it is today. Therefore, we mainly find house owners as well as craftsmen practising a craft as a master, because this also often coincided with ownership of the respective craft shop. As a consequence, only a select and relatively wealthy group of all inhabitants can be grasped by studying this type of record, and poor people are usually not recorded. However, not paying taxes (and thus not being recorded) was not automatically due to poverty. Town inhabitants could also fail to be brought onto a tax list because they had a certain privilege and were exempted from taxation or they were subject to an exceptional rule. In general, the tax regulations of medieval towns make tax lists an inappropriate source for the reconstruction of population size, the share of underprivileged and poor people living in the town, or inequality in general. This notwithstanding, they allow an analysis of house ownership, an analysis of the dwelling conditions of the more privileged and wealthy people in the town, as well as an estimation of the distribution of wealth for this smaller group. In addition, the spatial distribution of craft shops and working places in the town can be—at least in part—reconstructed by making use of tax lists. Sometimes—this is the case for late medieval Greifswald—surviving town books (see "Urban Administrative Sources") may also give information on the ownership of real estate and houses.

See reviewed sample studies 13, 16, 18, 49, 55.

Archaeological Sources (Ulrich Müller)

Archaeology studies the material expressions of economic behaviour at different scales. Their analyses cover topics ranging from the local micro level to the global macro level. Archaeological sources are mainly obtained by excavations. Generally, one differentiates between finds (artefacts, ecofacts and biofacts) and features. Features comprise, for example, earth layers or earth discolorations (layers) and walls or pits (structures). Furthermore, the relationships between finds and layers or between finds themselves (e.g. coins stuck together in a coin hoard; see the respective keyword) are also considered as features. For the creation of a temporal, relative sequence, stratigraphical laws are normative.

In addition, non-archaeological methods (e.g. geophysics, GIS and network analyses, see Chap. 9) generate data for archaeological studies. Data concepts emphasise the empirical character of archaeology. Primary and secondary data are part of the archaeological record (Buccellati 2017), which involves 'the body of physical (not written) evidence about the past' in the sense of 'material culture' (objects made by, used by or associated with humanity) or 'the material remains of the past' (the archaeological record as the 'fossilised' product of physical, cultural and taphonomic processes) and all documentations.

See reviewed sample studies 20, 37, 39, 41.

Coin Hoards (Sebastian Steinbach)

A hoard is a collection of valuable goods (i.e. jewellery or coins). Normally it is buried in the ground (treasure) with the intention of the former owner to recover it in the future. Usually for some reason—such as forgetfulness, physical displacement or unexpected death—the owner is unable to return to and recover the hoard, which then is found by archaeologists, metal detector hobbyists or even private individuals.

One has to differentiate in general between single finds—one isolated object or several objects unconnected to each other but within one specific area (i.e. a settlement or church)—and hoards—an intentional accumulation of valuable objects. But there are also lots of categories related to the function (i.e. treasure or gift) or location (i.e. graves, churches or urban settlements) of the object/s.

Hoards and single finds of coins are important sources for the money supply in certain regions, the circulation and usage of currencies or the social status of their former owners. Also they can be part of cultural heritage (i.e. funeral rites or religious offerings) and used as a source of information about daily life, behaviour or faith. Coin hoards can be analysed with statistical or metrological methods (see Chap. 9) such as the description of the value (content or face value of the coins included), the period of accumulation or the geographical space in which the currencies circulated.

Without written information, it is difficult to tell anything about the intentions and reasons of the former owner to hide his coins and especially the different objects (currencies, coin types or values) included.

See reviewed sample study 54.

Artefacts (Julia Bruch)

Artefacts are understood as the entire material and immaterial world created by humans; in addition to abstract cultural creations such as works of literature or musical compositions, domesticated animals and plants can also be understood as 'artefacts'. In addition to artefacts, all natural things are summarised under the term 'things'

(Eggert 2014). Things can be handed down in the original or in the form of reproductions and illustrations. They can be used for very different questions regarding cultural history and also be fruitful sources for economic historical analyses. Products can, for example, allow conclusions about production operations, or tally sticks can be used to analyse premodern accounting systems and procedures (see the entry on tally sticks). Natural resources and their handling can be interesting objects for the investigation of questions about technical and environmental history. Material things are investigated far more often than immaterial things. The investigation of material things is limited, if the context of the preserved thing is no longer reconstructable, due to the fact that many things are handed down as unique specimens. Therefore, the source value of such unique specimen is not representative (see further Samida, Eggert and Hahn 2014).

See reviewed sample studies 6, 12, 14, 37, 40.

Coins (Sebastian Steinbach)

A coin is a small and usually round piece of precious metal used as a medium of exchange, legal tender and mass media. Coins can be found as single pieces in public or private collections or in coin hoards as an archaeological accumulation of objects.

These are normally standardised (total weight, fine weight, diameter and appearance) and produced in large quantities by a minting authority (i.e. a state, city, bishopric or duchy) in a specified workshop (mint). The value of a coin can be specified and guaranteed by an authority (face value) or depending on the precious metal content (content value). In premodern times, where coins were usually made of precious metal (gold, silver or copper), the value of different currencies was a mixture of content value (changing metal content) and face value (fixed exchange rates).

One has to differentiate between 'coins of account' (*Rechenwährung*)—a unit of money that does not exist as a real coin, but helped to figure prices over longer distances—and 'real coins'—a unit of money that exists as a material object and is used in daily payments. Sometimes, coins of account and real coins can be expressed in the same term (name of a currency), making it difficult to decide which kind of coin is referred to in a written source. Coins are important sources not only for questions of money supply or money circulation, but also for the representation of rulership or various topics of cultural studies (religious belief, clothing, symbols etc.). Coins (material objects) have to be connected to written sources, such as counting books or minting ordinances, or to archaeological surveys of coin finds/hoards to receive more information about the used coinage within one region or exchange rates between different currencies.

See reviewed sample studies 54, 66.

Pictorial Sources (Julia Bruch)

Before addressing the material world in general, cultural studies first turned to images as objects of investigation; this was called 'iconic' or 'pictorial turn'. What is subsumed under the term 'image' is controversial. In contrast, there is consensus that one should examine not only paintings but also images, no matter how they were produced or what is shown on them. Moreover, in art studies and art history, one no longer only examines the products of high art. Rather, the boundaries between high and low art are increasingly dissolved. Pictures survived usually as originals in museums and collections or as later reproductions (Eggert 2014; Schulz 2014). In order to make these fruitful for economic historical questions, for example, to infer from a painting of a premodern market event the processes that actually happened on a market, one needs the tools of art history. There is obviously a temptation to analyse pictures as images of reality, but such an investigation would be inadmissible according to art historical understanding. Consideration must always be given to the context in which the image was created, who produced it, who commissioned it, what kind of image conventions were used and so on. Nevertheless, images can enrich economic studies, either as an object of investigation itself (e.g. the art market and production methods) or by analysing and evaluating the significance for a socio-economic group to be described in more detail.

See reviewed sample studies 14, 37, 40.

Tally Sticks (Tanja Skambraks)

Tally sticks (lat. *talea*/*tallia*) are wooden instruments of control and proof used in administrative economic contexts from the eleventh to the twentieth century all over Europe (Kuchenbuch 1999, 2002; Wedell 2011). Noble households, tradesmen and labourers in towns as well as peasants in villages used these sticks (often made of hazel wood of different lengths, consisting of one single piece or two interlocking bits) to document different kinds of numerical information. These included measures and values of services and taxes in the context of the manorial system, credit or labour services, billing in retail trade or wages in urban and rural milieus.

People engraved them with—mostly locally valid—incisions and notches or wrote on them (e.g. exchequer tallies): sometimes additional information or even short texts enhancing the legal value of these objects. Thus, they could function as proof in court cases—playing a role comparable to diplomas or letters of exchange. Typologically, they are connected to trademarks, seals, coins or stamps. In spite of their great formal and content-related diversity, they were overall pre-metric and pre-literal objects of quantification, sometimes very closely linked to written sources, like account sheets or diplomas, to which they were sometimes fixed. The use of tally sticks provided cheap and mobile ways of short-time documentation for economic actors. For researchers, they form a part of the materiality of economic transactions in the contexts of credit, production and markets in all social strata.

See reviewed sample study 67.

Databases (Ulla Kypta)

Databases might seem like an odd choice of source type. But a number of historians today are occupied with compiling databases, and these databases can be used not only by themselves (see the reviewed sample studies 30 and 38 in Chap. 7), but also by other researchers. In a database, a large quantity of data is stored and classified. They often come as Excel or Access files. This data can be analysed by employing advanced quantitative statistical techniques, for example a regression analysis. A database can also be useful for researchers who want to cross-check the results of their own (quantitative or qualitative) case study with data from other cases (see entry on the micro-exemplary method in Chap. 9). In a database, historical data is classified into categories. Thus, some of the details pertaining to the specific historical case always get lost (see entry on classification, Chap. 9). When working with a database, one should always check how the data was obtained and compiled and so make sure that it can yield meaningful results. A good example for an openly accessible database is the receipts and expenditures of the city of Basel for the years 1535–1610: The data can be selected according to needs, it can be downloaded as Excel files, and every data point can be traced back to the entry on the manuscript, which is directly accessible in digitalised form: http://gams.uni-graz.at/context:srbas.

See reviewed sample studies 21, 24, 30, 31, 38, 45, 48, 57, 64.

Historiographical Sources

Chronicles (Julia Bruch)

The most interesting chronicles for economic historians are not those which report on times long past according to a world-historical scheme, but those mixed texts which include contemporary historical reports, for example (commented) price lists, weather observations and everyday occurrences in premodern towns and their markets.

These are usually handed down as bound codices, sometimes conceived as a whole book and written in one go, and sometimes conceived as expanding object and continuously supplemented. Especially in the latter manuscripts, blank pages and later additions from other hands can be expected. As a rule, the entries relevant to economic history are snapshots that cannot be evaluated in series. One can take climate data from them, data for prosopographies or network analyses (see Chap. 9), on the cultural life of economic institutions (see the reviewed sample studies 7 and 14 in Chap. 7) on ownership, forms of taxation or disasters, on resilience measures and urban or courtly order. Like all other narrative sources, conscientious source criticism is necessary (see “Source Interpretation/Hermeneutics” in Chap. 9); the sources are highly subjective and usually pursue a certain narrative structure, they want to teach, present a status quo as particularly worth preserving, and are often biased and judging (Brauer 2013, 93–105).

See reviewed sample studies 1, 3, 7, 8, 14, 23, 31, 33, 34.

Legal Sources

Charters (Julia Bruch)

A charter is a written document, which is certified and composed in accordance with a special form and documents a legal transaction (Goetz 2012, 135). Those documents are not always a mirror of valid law, but rather represent legal claims and have evidentiary force. This is the reason why such documents were falsified in a not inconsiderable number. As a consequence, a separate auxiliary science branch, diplomatic (in German *Diplomatik*), developed for the evaluation of original documents. Those documents of legal transactions were delivered either as original charter, as a certified copy with the whole text (*vidimus*) or as a part of the text in another charter (*transumpt*) or a part of the text in a book. Such a book is called register, if the person or organisation who issues the document registers it (like the *Papstregister*), or chartular (*Kopialbuch*), if the person or organisation receiving the document registers it (Goetz 2012, 136–138). A special form of charters are the privileges for merchants, cities or Jews (see the entry on privileges). Many charters have notes on the backside (*Dorsualvermerk*), which give information about the person or organisation who sends and who receives the document and about the date and content. Especially deeds of sale (*Verkaufsurkunden*) offer an important insight into the economic sector of monasteries, courts or cities, for example. The rather conservative research reconstructs (mainly from series of charters) properties or property claims of monasteries, courts, persons like kings and so on, and the development of properties. From series of charters, one can also reconstruct a travel route of the person issuing the document. Newer questions also concern the composition of charters and their use in ritualised contexts. A series of documents can also be used to reconstruct connections to other organisations and individuals (see "Network Analysis" and "Prosopographic Analysis", Chap. 9).

See reviewed sample studies 1, 2, 7, 8, 27, 32, 49, 68.

Contracts (Stephan Köhler)

This entry deals with private contracts. (For political and constitutional contracts see keyword: charter). Contracts in private law constitute mostly legal obligations like rents or loans. In a broader sense, a contract is the concordant will (*consensus*) of two or more persons or contracting parties in order to establish a legal commitment. Contractual obligations varied enormously in the Middle Ages from area to area and underwent many changes within the period of hundreds of years.

Most contract forms derived from Roman law. But there were also other contracts, which were purely medieval creations (i.e. *commenda* or *sendeve* in medieval trade). Written contracts survived in many different material forms (see entries on charters, notary registers, diplomas and mortgage notes) and often included means of authenticating the document (i.e. seals, *signetum*). The legal force of these contracts is also reflected in their internal form. Hence, it is necessary to understand the legal techniques of the time. Since the sources themselves are legal documents, historians are advised to read the fine print, so to say, and take legal clauses seriously. Wills and trade, credit and sales contracts are essential sources for economic history and affected all facets of mercantile and industrial activities. While trade contracts provide a snapshot of a merchant's activities, contracts between mintmasters and minting authorities, for example, are valuable sources for craftsmanship and the quantities of coins to be struck within a certain mint and their total/fine weights as well as the loans of the mintmaster (*Schlagschatz*) and his labourers or the technical equipment of a workshop.

See reviewed sample studies 11, 12, 51, 52, 58, 59, 61, 63, 66.

Mortgage Notes (Christian Scholl)

Mortgage notes are usually issued as charters by a debtor and indicate the sum the debtor must pay back to a moneylender by a specific time. Mortgage notes also provide information on the height of the default interests (*damnum*), which become due when the debtor cannot pay back the sum by the time agreed upon; in the Holy Roman Empire, the default interests commonly consisted of two pence (*Heller*) per pound and week. Most medieval mortgage notes do not, however, contain information on the original level of interests.

Furthermore, mortgage notes say something about what happens when the debtor is unable to pay back both the loan and interests. According to a customary clause, for example, the creditor has the right to seize the house or other personal belongings of the debtor. Other security clauses determine that no public authority, for example the king, a prince, a bishop or a city council, can free the debtor from his obligation to pay back his loan. There are also clauses that oblige the debtor to go to a tavern or inn and stay there until the debt is paid. A clause like this increased pressure on the debtor because he had to pay further money for his lodging in a foreign place as long as he had not paid back his loan.

See reviewed sample studies 47, 51, 62.

Privileges (Ulla Kypta)

Two types of privileges were shaping the institutions of trade: privileges for merchants and for towns. The first type was mostly granted to a group of merchants, sometimes to individuals. The ruling body, whether a prince or a town council, guaranteed the merchants certain rights which reduced the insecurity of their business operations. For example, in a privilege the ruling body could assure the merchants that they would get compensation for goods which had been stolen, or it could freeze tariffs at a certain level, or it could assure the merchants that they would get help in enforcing debts. Privileges often contained special conditions for the trade of the privileged group: Hanseatic merchants in Bruges, for example, were allowed to unload their goods on holidays, and urban personnel such as brokers or wagers were allowed to demand no more than a certain fixed wage of Hanseatic merchants.

The second type was granted to a town: The king or other overlord allowed the town to establish a market at certain times of the year. This was often combined with the promise not to grant a similar right to a city nearby, or with the so-called staple right: The staple right compelled merchants who passed a town or its surroundings to display their goods for a certain number of days and to offer them for sale. Towns were often allowed to establish a special court for merchants during the time of a fair, and merchants were granted safe passage to enable them to come safely to the fair or market. Privileges allow us to analyse the institutions of trade such as the times of trading, the organisation of the urban scales or stores houses, or urban personnel such as brokers or money changers. Urban networks and trading connections can be constructed by studying which merchants enjoyed privileges in which cities. Privileges are normative sources. They state the rights that should be granted to a group of merchants or a town, but they cannot tell us if these rights were respected in practice or if they were even claimed. Hanseatic merchants, for example, kept complaining about the violation of their rights in Bruges by the urban personnel. Privileges were issued as diplomas and survived because they were kept by the receiving party.

See reviewed sample studies 10, 27, 49.

Privileges for Jews (Christian Scholl)

Privileges for Jews were issued as charters by the Christian patrons of the Jews, especially the rulers of the Holy Roman Empire and local lords such as bishops or city councils. Privileges contain the social, religious and economic rights. They guarantee, for example, the protection of the Jews, their rights to possess landed property, to exercise their religion and to exercise a trade, either as traders of goods or money.

In the period between the first settlement of the Jews in Medieval Germany (tenth/eleventh centuries) and the pogroms of the Black Death (1348–1349), privileges were usually granted for the respective Jewish community as a whole or, as in a famous privilege by Emperor Frederick II of 1236, for all Jews within the Empire. After 1350, an increasing number of privileges were issued for individual Jewish moneylenders, which weakened the autonomy of the Jewish communities considerably.

For economic historians of the Later Middle Ages, these privileges are important because they inform us about the conditions according to which Jews were allowed to lend money against interest; some of them regulate, for example, the level of the interest rates the Jews were allowed to demand. Since they are normative, it is, however, often difficult to deduce from privileges alone how the Jews were actually doing business as moneylenders.

See reviewed sample study 53, 62.

Wills (Max-Quentin Bischoff)

From the Late Middle Ages onwards, wills were preserved in large numbers. Town burghers of different social strata began to set down the disposition of their possessions after death in writing, initially in Latin and since the late fourteenth century increasingly in local vernaculars. Testaments usually survived in the archives of town councils as single pieces of parchment; many of them have been published in charter books (*Urkundenbücher*, see entry on urban administrative sources). As legal acts, testaments are written in a very schematic language: an identification of the testator is followed by the various bequests, usually divided into two sections, with the first concerning ecclesiastical institutions and alms to the poor and the second individuals such as family and friends. Witnesses and executors and the date of writing are stated in the closing paragraph.

Testaments are valuable sources for qualitative as well as quantitative analyses: they provide rare information about different kinds of personal relationships and how they are expressed in value. The individuals and institutions mentioned shed light on extensive personal networks. The mass of possessions listed in these documents can give some indication of economic wealth and forms of asset investments. However, testaments usually did not include goods on which the legal heirs had a statutory claim (so-called immovable goods). Thus wills cannot provide a full picture of what an individual possessed.

See reviewed sample studies 14, 17, 26, 32.

Court Records

Court Records (Urban) (Benjamin Hitz)

Legal instances were an important factor in the administration of premodern towns, for penal justice as well as for civil disputes. The latter are of interest here. As Signori points out, all cities developed practices of recording various kinds of legal procedures (Signori 2015, 15). In general, court records are in the form of codices, sometimes differentiated according to the procedure. The extensive use of courts by contemporaries led to the creation of large serial collections of sources (see Piant 2007 for France). Urban courts were often operating alongside or even in competition with other court instances, for example, ecclesiastical courts and special institutions for foreigners (see Fusaro 2014 for Venice and Rothmann 2008 for justice during trade fairs). To name one concrete example, in Basel we find a huge variety of court records proving the differentiated development of written culture in civil jurisdiction. These court papers comprise so-called *Urteilsbücher, Fertigungsbücher, Vergichtbücher/Konfessate, Kundschaften, Frönungen and Verbote, Verrechnungen* and *Beschreibbüchlein* (Signori 2015). Recurrent subjects of litigation were debts (probably the most frequent reason to go to court, see Signori 2015; Groebner 1993; Nicholas 2007), inheritance (Signori 2001), wage conflicts (Simon-Muscheid 2004) or bankruptcy (Safley 2000). Civil courts did not only settle conflicts but also served as the public recordkeepers of transactions, agreements, procurations and debts (e.g. see Nicholas 2007). As institutions, courts provided securities for commercial deals and thus helped lower transaction costs (Greif 2006; Dijkman 2011, 238). Recent research has focussed on the right perspective to choose when reading court records. The use of justice was an active choice by its users (Dinges 2000), who should be seen as actors (Cerutti 2004, 27–27; Johnson 2014) capable of shaping the 'culture of law' (Cerutti 2004, 30). All in all, court records provide rich sources about commerce from an everyday perspective, which have not attracted much attention up to now: "Economic and social historians have only recently begun to analyse the everyday activities of courts" (Fusaro 2014, 146). Difficulties arise due to the sheer mass of material held in court archives (see Piant 2007) and the focus on problems and conflicts in court records (Smail 2003, 17). Because of the differences of tradition, comparative studies are often difficult to carry out (Signori 2015, 15).

See reviewed sample studies 3, 8, 16, 26, 31, 32, 37, 44, 51, 53, 55, 56, 60, 63.

Court Records of Villages (*Haderbücher*) (Tanja Skambraks)

Haderbücher (German: *hadern* = to negotiate, to quarrel) are protocols of various length stemming from medieval lay courts. By solving everyday conflicts, these courts were essential guarantees of peace within their communities. The documents inform us about the reasons, actors, negotiations and solving of economic conflicts in the context of local lower jurisdiction: matters of inheritance, boundary disputes, selling regulations, pawning and land lease, misappropriations, fraud, unrendered services and payments, as well as cases of violence and insults are dealt with. The most prominent ones stem from Ingelheim (near Mainz in Germany) from the years 1387 and 1534 and are the earliest serial source of jurisdiction in a German middle-sized town and its surrounding villages. They are kept in the form of bound volumes in the archive of Ingelheim. Four volumes have been edited and two more are available online (Marzi 2011; https://www.haderbuecher.de).

The protocols tell us about conflicts in the economic spheres of trade, crafts and agriculture involving a wide range of actors, like knights, patricians, clergymen and women and peasants. Thus, they enable us to describe and analyse more precisely the economic and social networks of people in the rural or semi-rural sphere (https://www.haderbuecher.de; last accessed on 25 October 2018).

See reviewed sample studies 38, 50.

Law Books (Stephan Köhler)

Law is in its function, form, field of application and content a universal instrument for permanently or temporarily arranging regulations between (different) groups of people. One peculiar problem of analysing premodern law is the problem of law in (more or less) stateless societies, resulting in shared jurisdictions all over Europe (Taylor 2015, 859). The most important influences on medieval law codes derived from Roman law. In Europe, after the collapse of the Roman Empire, a 'vulgar' Roman and a Romano-Germanic law developed in the different areas. These new forms of law differed from the learned law of roman jurists and the imperial constitution and stimulated much change. Of utmost importance was the revival of Roman law in the Middle Ages after the so-called Renaissance of the twelfth century. Furthermore, two new traditions were added to the older ones: the canon law of the Church and the so-called *Lex Mercatoria* dealing with commerce, which is, however, no written codex of law, but rather a term to denote the shared customs of merchants (Pryor 1981, 1–20).

Law codes survived in many different forms like charters, city books, deeds, privileges, statutes or sumptuary laws to mention but a few (see respective keywords). New Institutional Economists have focused on analysing the importance of reliable legal systems that minimised risks and transaction costs and also made the outcome of trade and other business activities more predictable (Epstein 2009, 72; North 1990; Greif 2002, 2006). One has to keep in mind that written law codes are often based on much older oral traditions and customary law. Law codes often deal in detail with commercial activities and regulated trade, credit and even production. However, law codes, being normative sources, only tell us one part of the story, and leave out the actual practices of commerce, which can be reconstructed from other sources like *Haderbücher*, merchant books, merchant letters or notary registers (see respective entries).

See reviewed sample study 4.

Letters of Exchange (Tanja Skambraks)

Letters of exchange have two basic functions and emerge in two different types: one type is a written document promising the payment of a certain sum of money at another place in another currency for a product or service, making them a secure method of money transfer excluding the rather insecure transportation of actual coins over long distances. Thus, they are an instrument of payment in trade between two merchants and an agent banker in long-distance trade. The second type—the letter as source of credit in moneylending transactions—describes the loan of funds to a debtor (taker) by a creditor (principal/deliverer) via a third party (agent/drawee) as an instrument of credit. Due to the difference in value of one currency in another place (*permutatio pecuniae*), there is the chance for profit because of the different exchange rates involved in the transaction (arbitrage in different cities or *cambium seccum* in the same place).

Therefore, letters of exchange can also be instruments of speculation. The earliest known letters of exchange stem from Geneva in the second half of the twelfth century, as notarial acts show. They were used to finance the crusades. Shortly after this, fairs like those in Champagne fostered the professionalisation and development of this technique (see Denzel 1994, 2008; Munro 1991).

In the credit transfer the transaction typically involves four parties:

City A: the deliverer (=principal)

lends money to/buys a cambium from

City B: the taker (=principal)/City B: payer/drawee (agent of B)

who actually pays back the loan to A for B in local currency after three months' usance.

City B = payee (agent of A) buys a *recambium* for the deliverer (with profit)

See reviewed sample studies 48, 57.

Notary Registers (Stephan Köhler)

Notaries were officials empowered by a public authority (king, church, city) and charged with the duty of redacting legal documents for anyone who needed them. As persons of public authority, they were obliged to archive their cartularies. What is usually referred to as 'notary contracts' are in fact short entries (*notulae, imbreviaturae*) that are written down in notarial registers, preliminary to the rendering of a full contract (*instrumentum publicum*). Cartularies were written both in Latin and later, from the fourteenth century onwards, in vernacular languages.

The data provided by the registers yields the full spectrum of medieval society: there are marriage and dowry, trading, leasing and apprenticeship contracts, testaments, loans, sales, and promises of payment written down in the registers, thus making the registers a valuable economic source.

However, because not all cartularies survived and because it is evident that many contracts were not written down for various reasons (small sums involved, short running time etc.), the statistics based upon these sources remain an 'approximation minimum' at best (Doehaerd 1941, 44). Besides, lots of contracts written down in the cartularies are crossed out. This could have several different meanings (contract cancelled or handed over to another notary), depending on the habits of the notary. One has to keep in mind that not all editions supply all the cancellation clauses and sometimes references to the manuscript are unavoidable.

See reviewed sample studies 8, 51.

Minting Ordinances (*Münzordnungen*) Sebastian Steinbach

The Imperial minting ordinances (*Reichsmünzordnungen*) were attempts at unifying the various coins (see the respective keyword) and currencies within the territories of the Holy Roman Empire in the sixteenth century. Four of these ordinances were acclaimed in 1524 (Esslingen), 1551, 1559 and 1566 (Augsburg). They tried to regulate the striking, appearance and ratio of silver (*Guldiner* and *Taler*) and gold (*Gulden* and *Dukaten*) coins by fixing their fine metal weight, image, inscription and exchange rates. One major decision was the declaration of the Cologne Mark (approximately 234 grams) as the general standard for calculating coin weights. The minting ordinances of the sixteenth century differentiated between 'imperial coins' (*Reichsmünzen*) with validity all over the Holy Roman Empire (usually coins of higher value) and 'local coins' (*Landmünzen*) with validity only within a certain territory (small change, i.e. in Saxony, Bavaria or Brandenburg). Apart from that, various territories of the Holy Roman Empire had their own minting ordinances.

The ordinances help to calculate the total weight, fine weight and exchange rates between currencies of different states, although they cannot tell us anything about the daily practice of the use of money (coins). Minting ordinances are normative (legal) sources for the regulation of currencies, which must be compared to the everyday use of coins as it is reflected, for instance, in coin hoards. Additionally, other written sources, such as letters, reports and protocols of the negotiations which led to the final minting ordinance, can be consulted to get information about the interests and aims of the involved political or territorial parties (i.e. counts, dukes, bishops or city councils).

See reviewed sample studies 59, 66.

Statutes (Tanja Skambraks)

Statutes are normative texts issued by organisations like towns, religious orders, churches, universities, synods, crafts and guilds, fraternities and hospitals—often from an urban context. In many cases, they survive as parts of urban legislation and would have been kept together with the institutions' most precious belongings in specific rooms or shrines. Thus, a good number of late medieval statutes survive. Their content consists of a prologue, explaining the foundation, aims and leading personalities, followed by a number of chapters or articles. Statutes regard a variety of topics, among which we also find regulations of economic matters, like funding, fundraising and administration of funds, payments of administrators and officials, bookkeeping and control by audits. Furthermore, they show the relationships between certain members of society and inform about the distribution of power and systems of sanction. Late medieval institutions often reworked and renewed their statutes, adapting to necessities and social changes. Being normative texts, statutes are limited in their information content depicting an 'ideal' rather than 'real' practices and everyday situations. If they are complemented by pragmatic sources, like account books, they are valuable for studying the regulative practices, personnel and organisation of many economic institutions. See further Drossbach (2009), Daniels (2013, 207–219) and Henn (1999, 288–295).

See reviewed sample studies 3, 7, 10, 11, 12, 14, 15, 16, 24, 37, 56.

Sumptuary Law (Tanja Skambraks)

The term sumptuary law comprises late medieval normative and regulative texts enacted by urban authorities (e.g. councils or bishops) or other secular authorities (e.g. kings or princes) aiming at the suppression of excessive consumption of luxury goods, like precious clothes, jewellery or wine, spices and meat. The exchange of gifts at festivities, like births, weddings or funerals, was also one topic of late medieval sumptuary laws. The underlying idea was on the one hand to avoid economic crisis through bankruptcy of individual members of the society, on the other hand, to maintain the distinctive features and thus the status of social groups, especially the urban elite who became challenged by newcomers from lower social strata wearing precious materials, like silk, lace, gold or diamonds, and thus blurring those distinctions. In the context of rising incomes in successful trading towns, more people could afford to dress in costlier clothes and consume better food. The cardinal sins of *avaritia* (greed), *gula* (gluttony) and *luxuria* (lust) played a prominent role in the medieval thinking about economy as well as in secular politics trying to fight them. The great number of these sources shows that their effect on peoples' behaviour was rather small.

The sources, in German towns often closely linked to urban police orders and orders concerning clothing (and maybe part of city books) on the European courts associated with court orders (*Hofordnungen*), give very detailed information on clothing and fashion. Studied together with contemporary pictures and, for instance, household accounts, they provide valuable insights into standards of living and developments in fashion in premodern times. See further Hunt (1996), Kovesi (2008) and Wilson (2017).

See reviewed sample study 17.

Village By-Laws (*Weistümer*) (Niels Petersen)

The idea that a kind of natural law or order of things can be found by judges and the community deciding special cases, forms the basis of rural legislation in the Late Middle Ages and early modern times. It could be changed over time (*Besserung*) or differ from village to village. While original legislations in towns or even the Reich can be regarded as similar forms, researchers use the term *Weistum* almost exclusively for rural findings of law, thus following the collection of Grimm (1840–1878). *Weistum* as a term stems from the middle Rhine and Moselle region, while these acts were called *Offnung, Landrodel, Ehaft* or *Ruge* in other regions. They are also related to the rural court records (*Haderbücher*). The structure of these sources is similar: typically, there would be a formalised question about a certain circumstance at the beginning, which leads to a discussion and then the finding of a certain right or obligation of the cooperative village community. This means that these findings were always locally bound. It appears that while the findings, or arbitrations, themselves were undertaken by local jurors or judges of the village community, it was often the territorial authorities that initiated them and made sure they were documented. It is still uncertain how accurately the surviving written *Weistümer* mirror the proceedings of the sessions in the villages. Usually *Weistümer* would deal with questions of taxpaying and soccage, manorial relations as well as relations between peasants and over the common ground (*Allmende*). The central collection of *Weistümer* is still Grimm (1840–1878).

See reviewed sample studies 19, 27.

Business Documents

Merchants' Books See Administrative Documents

Merchants' Handbooks (Ulla Kypta)

Merchants' handbooks comprised useful information for a merchant who travelled to or did business with partners at various European (and sometimes even Asian and African) cities. The information is typically classified according to regions and towns. The author, who was a merchant himself, listed information on the currencies that could be used in the respective town, on weights and measures and how they corresponded to weights and measures elsewhere, on prices and exchange rates, cargo routes and rates, and on the trade practices that were in place at this specific trading location. Sometimes the author added some general remarks about the life and duties of a merchant, but these parts are generally very short. Merchants' handbooks thus provide us with all the information which they originally prepared for their colleagues; they also tell us about premodern weights, measures, currencies and so on. Merchants' handbooks give an impression of which regions and cities a premodern merchant could consider trading with, and they allow us to see what kind of information was important for him if he planned to start trading with this particular region or city. We have to keep in mind that we are not able to check whether the information given in a merchant's handbook was correct: for example, exchange rates could change quite quickly, so it is not clear if the rate cited in a book was meant as a snapshot of a certain moment in time or if it was supposed to give a ballpark position of the exchange rate. Furthermore, the information was compiled by a single merchant with his individual point of view and individual channels to obtain that information: A handbook by another merchant might have looked different.

The first and most famous merchant's handbook was written by the Florentine Francesco Balducci Pegolotti (c. 1340). Most merchants' handbooks, however, stem from the early sixteenth century, for example the book by Matthäus Schwarz who was working for the Fugger family in Augsburg (Westermann and Denzel 2011). A bibliography of the merchants' manuals written between 1470 and 1600 that have been printed can be found in Hoock and Jeannin (1991).

See reviewed sample studies 17, 48, 58, 65.

Merchants' Letters (Ulla Kypta)

Medieval merchants were constantly writing letters. After merchants became sedentary during the Commercial Revolution, letters kept them in contact with their business partners in other trading cities. Only a small part of a merchant's letter was conversational in the sense of a modern letter, asking about the health and discussing political news. The largest part consisted of a report of his own business activities in so far as they concerned the addressee: Which goods did he send to the town where the other merchant was present, did he have to issue a letter of exchange (see the respective keyword) that the addressee would have to pay and so on. Merchants also discussed the business activities they transacted for each other: One told the other which goods he would be able to buy and send to him, and asked him to buy certain goods to send back. Thus, merchants' letters contain information about the flow and quality of goods, about prices and price fluctuations, and about the networks of merchants and their rules and routines. Merchants' letters also offer a glimpse of the mind set of merchants, of their worries and hopes, and the way they dealt with their everyday tasks. The perspective of a letter, however, is the subjective perspective of a merchant and thus not always reliable. Furthermore, in most cases only one side of the conversation has survived. It is not easy to put the information into context. The most famous letter collection from the Middle Ages stems from Francesco di Marco Datini: roughly 140,000 letters of his communications across Europe were stored in his house in Prato. Another famous letter collection are the Geniza documents with about 1,000–1,200 commercial letters from the medieval Islamic world (Goldberg 2012). About 500 letters to the Hanseatic merchant Hildebrand Veckinchusen have survived and are edited and accessible online via Wikisource.

See reviewed sample studies 3, 22, 26, 32, 40, 45.

Travel Books (Ulla Kypta)

Premodern merchants travelled a lot: Even after they became sedentary during the Commercial Revolution, they visited different fairs and markets to meet other merchants or to find out about new business opportunities. However, merchants seldom wrote extensive reports on their travels, at the most they included some practical advice for travelling in a merchants' handbook (see the respective keyword). One of the most famous exceptions are the travel reports by the venetian merchant Marco Polo who gave an account of his travels through the Mongolian empire, which comprised a large part of Asia (accessible online: https://archive.org/details/bookofsermarcopo001polo and https://archive.org/details/bookofsermarcopo002polo).

Other travellers put their experiences down in writing as well, for example pilgrims who visited Rome, Jerusalem, Santiago or one of the hundreds of other places of pilgrimage in Europe. Knights and diplomatic envoys travelled between different courts. Their reports tell us about the layout and natural conditions of the land or city which the traveller visited, about its resources and the economic activities performed there, about its infrastructure and about the special habits and customs in place. Travel reports give an impression of how people moved around Europe in premodern times: how transportation was organised, how expensive it was, which roads they travelled, where they stayed for the night, how they got their bearings in foreign surroundings and so on. This information helps us to understand how the journeys of merchants and the shipping of goods across Europe could work. Travel reports should be read with care since they were written by individuals with their specific interests and perspectives. Moreover, they were often composed after the journey or reworked to a literary work; hence, not all information contained in the reports should be regarded as necessarily accurate. A very interesting collection of travel reports by German travellers can be found in Reichert (2009).

See reviewed sample study 3.

Guilds' Books (Julia Bruch)

Under the category guilds' books or guilds' files, as these sources are sometimes called (Goetz 2012), a whole number of sources are summarised that have emerged from the legal and administrative sphere of guilds. In these guilds' records, there are legally relevant acts such as statutes, orders, privileges, quality standards for the guild's products, and rules for the production and distribution of these goods, but also the records of everyday administration such as lists of masters, registers of journeymen, lists of taxes, lists of fines, accounts, historiographical notes and much more.

These sources offer insights into urban craftsmanship and its corporate associations. They can be used for a whole series of questions and methods: They provide material for prosopographic and network analyses (see Chap. 9), for example, or for questions concerning the organisation of production and distribution of goods, the political and social function of guilds and their integration into the city and beyond. Guilds' books are rarely serially handed down and even rarer than serial city books, which is why quantitative methods can usually only be applied over shorter periods of time. Especially rich is the guild tradition in cities with a guild constitution like Strasbourg (von Heusinger 2009).

See reviewed sample studies 7, 8, 12.

Theological Sources

Theological Tracts and Sermons (Tanja Skambraks)

Medieval theologians and lawyers from the twelfth century onwards were dealing with economic issues in their writings as one part of their thinking about the fundamental values of society. These sources, like theological tracts or sermons, which are often edited or available in digitalised form, tackle topics like usury and interest or the common good and are most valuable for the exploration of contemporary business ethics. Authors like Bernardino da Siena, Thomas Aquinus or Petrus Iohannes Olivi were keen observers of a flourishing economy in high and late medieval cities. As preachers and confessors of the urban elite, they closely followed new economic developments and the problems of new social groups, like merchants, and they used their skills to communicate their ideas to a wider audience, whereas their more sophisticated tracts became included in the canon law.

The form of these tracts very often follows the dialectic form of the scholastic question, with one hypothesis or question being followed by the pros and cons of this question—leading to a final synthesis. Thus, these sources are not an easy reading for a twenty-first century audience and require a good knowledge of Latin.

Nevertheless, they give most valuable insights into the discourse on economy, on economic thinking and economic norms. They also prove that friars were actively participating in developing norms and regulations by reflecting on the economic and social changes of their time. Thus, the history of economic ideas also helps to understand the economic practices and their development better; see further Langholm (2004) and Todeschini (2004).

See reviewed sample studies 3, 57.

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11

Conclusion: How to Do Economic History?

Julia Bruch, Ulla Kypta, and Tanja Skambraks

This book starts with a simple question: How to do research into premodern economic history? The past chapters have shown that there are a number of different possibilities of how to approach the study of the premodern economy. The important research questions that were outlined in Chaps. 2, 3, 4 and 5 can be tackled by employing the different possible methodological approaches described in Chap. 9 to scrutinise a range of different sources as specified in Chap. 10. The overview of

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current research in economic history shows that there is no need to build one overarching methodological approach to economic history that encompasses quantitative and qualitative aspects and can be applied to serial and narrative sources alike. Rather, different methods can and should be used in variation or in combination. Studies employing different methodological approaches stand alongside each other or complement each other. We present a number of studies that discuss the same topics using different methods; a large part of the studies worked with more than one methodological approach. For example, Sonderegger and Zanger employ microhistory, build a model, test hypotheses and do a comparison to determine the market participation of peasants.

This book thus shows that methodological diversity is flourishing in premodern economic history, which is probably what makes it such a lively strand of research: Many heated debates are going on, as Chaps. 2, 3, 4 and 5 discussed. We hope that this book might equip you to participate in the debates. Economic history tries to grasp the colourful economic life of people from the past. One generalised theory will never be able to explain all the different aspects of past economic life. On the other hand, if we want to make sense of the economic actions and relations of people in premodern times, it is not enough to describe single cases: We need to explain what this case tells us about the workings of past economies, how it helps us to understand how humans in the past did cope with the uncertainties of life, how they struggled to make a living, how they organised their economic relations to other people and how they invented ever new ways of producing and exchanging goods, services and money. Hence, we need to compare different cases, construct ideal types and classifications, find interrelations, explain causal relations, reconstruct the meaning of words and phrases, order and interpret the data. In short, we need to work with a range of methodological approaches to grasp the variety of premodern economic life.

This does not imply, of course, that the choice of method can be random. Every researcher has to make a conscious and well-informed choice which method or combination of methods she selects, according to her research question and the available source material. Choosing one or more methodological approaches for your analysis is not an easy task. This book offers some help with it. The important questions of premodern economic history which are currently debated are presented in Chaps. 2, 3, 4 and 5. You might like to find out, for instance, whether the Northern German economy was being commercialised during the Late Middle Ages, or you might be interested how informal markets functioned, or how peasants gained access to credit.

After determining the question, you have to search for appropriate sources to answer it. The range of different source types that can be used in economic history is depicted in Chap. 10. The research question and the choice of sources influence each other: The question points to certain sources where you might expect to find an answer. If you want to study the commercialisation of the Northern German economy, account books seem like a plausible source: They tell you which goods were sold for money (i.e. were commercialised), and they indicate which quantities of these goods were traded. If you are interested in informal markets, however, account books are normally useless, since goods traded on the informal market do not appear in official account books. Instead, information can be found in legal sources or urban administrative sources listing transgressors of the formal market; or in the minutes of town meetings where urban representatives discussed measures to prevent circumvention of the formal market. Peasant credit might be reconstructed with the help of legal sources from village courts, while interest rates can be calculated indirectly from letters of exchange or merchants' handbooks. In the glossary of sources in Chap. 10, each entry lists a number of topics that can be addressed by analysing this source type.

As all historians know well, sources seldom give an answer to the exact question the researcher had in mind. More often, they only answer parts of the question, or throw light on a new aspect of the question. Account books, for example, often cover only a very limited period of time. Based on one customs account book, the researcher can assess the degree of commercialisation at a certain point in time, but she cannot gauge whether the degree of commercialisation was increasing or decreasing. However, customs accounts often list more than one good, so they might open up the possibility of comparing the degree of commercialisation of different commodities. Administrative sources or minutes of town meetings do not tell much about the structures of an informal market, but they reveal information about its participants and tell us how urban officials talked about and judged these structures. The decision to analyse a certain corpus of sources thus often leads to a reframing of the research question.

As mentioned, the research question and the available sources in turn determine the choice of methods. Not every methodological approach yields answers to every research question. Lists of penalties for transgressors of the formal market, for instance, never comprise all participants of an informal market, so it would not make sense to perform a descriptive statistical analysis to determine the market size. In Chap. 9, where we describe the different methods, we specify for each method which research questions can be fruitfully tackled with it. The reviewed sample studies in Chaps. 6, 7 and 8 show how the methods are employed in practice to answer certain questions. If one studies accounts, for example, it is usually a good idea to start with descriptive statistics to assess the data contained in the accounts. On that basis, other methods can be employed, for example, a classification to group the entries into categories or a comparison of different kinds of entries. The minutes of town meetings state positions of the representatives of the different town councils. It is thus a good idea to perform a source interpretation or a discourse analysis in order to find out with what intentions the representatives formulated their statements and how they wielded power by doing so. Hence, the choice of methods depends heavily on the sources that one wants to study. Each source yields different kinds of data and thus has to be analysed with a method appropriate for this kind of data. In the glossary of methods in Chap. 9, each entry discusses what kind of data is needed in order to fruitfully employ this method.

Every researcher working in premodern economic history has to make such a conscious choice of a method or a combination of methodological approaches. When making this choice, it is important to appreciate the full range of possible methods and to explicitly discuss the reasons why a certain method or combination of methods was selected. The strength of premodern economic history as a field of research lies in the diversity of methods one can employ to study past economies. This diversity should be cherished. Researchers should remain open to use whichever method serves best to answer their research question and analyse the sources, be it a quantitative or qualitative, a more traditional or a newer approach, be the methodological approach rooted in economics or in historiography. But this wide range of possible methods makes it necessary to justify why a certain approach was picked and not any other one. Even if researchers opt for a quite common choice such as a regression analysis or a source interpretation, explicitly justifying the choice helps to keep in mind that there are other options. This book gives an introduction on how to make and justify the choice for a method or a combination of methods by presenting an overview of possible methodological approaches and their application.

Furthermore, opting for a methodological approach does not mean that you can pick one and then just have to follow the instructions. After deciding which method or methods are appropriate for a certain study, a number of further decisions have to be taken. For example, if a researcher opts for doing a regression analysis, she has to determine which factors should serve as independent (explanatory) variables. If one selects to compare economic phenomena (taxes, brokerage rules etc.) in different territories, one has to decide whether to compare them during a certain time period or for selected years, and for which time period or which selected years. The reviewed sample studies outlined in Chaps. 6, 7 and 8 give numerous examples of how researchers dealt with these decisions. Making one's choices explicit helps other researchers follow the argument more closely and gauge the scope of the results. Besides, it fosters discussions between scholars on the appropriate ways to tackle research questions. Such discussion further sharpens our tools for doing economic history and broadens our horizon for all the different ways economic history can be done.

We give an overview of the diversity of methodological approaches and sources by presenting studies on the Holy Roman Empire. The different articles and books employ a range of methods and analyse a variety of sources. Not more than 6 of the 68 studies presented here are tagged with only one methodological keyword. Two thirds of the studies employ more than two methodological approaches; the median is at three. Nearly two-third of the studies use either descriptive statistics or source interpretation or both. Many of these studies combine descriptive statistics and/or source interpretation with one or more other approach. Source interpretation and descriptive statistics can be regarded as the basic exploratory methods. They serve as a first step to grasp the content of a source. After that, further methodological approaches such as a comparison or an institutional analysis can be employed to add a further layer of interpretation.

The studies presented were chosen not only to display a range of different and interesting methodological approaches but also to give an impression of how the study of the Holy Roman Empire connects to the broader international debates on premodern economic history. Regarding the study of production, the research on the Holy Roman Empire focuses especially on urban communities and their interaction with the hinterland. Here, questions of the organisation of production, innovation and the establishment of new structures are discussed. These questions can be adapted to the larger debates on commercialisation, proto-industrialisation and the development of new forms of production and distribution. Proto-industrial forms can be found, for example, in the rural commercial area, by studying the putting-out system or by focusing on one product (such as the colour blue) and reconstructing its production processes and distribution channels. Another focus lies on the organisation of urban work in particular and concerns the overarching issues of division of labour, specialisation, training, free and dependent work, and work and gender. The guild and its forms are often discussed in research as an institution or as cartels, as a social group or as organisations that educated, innovated and transmitted knowledge.

Research on the Holy Roman Empire can also be included in the general questions on demographic development and on the use of general resources. The social topography of cities and their influence on the population, collective action of a community and the use of common goods are widely studied. The range of topics of the investigation of manorialism, rural areas and mining in the Holy Roman Empire covers above all the relations to towns, to superordinate structures such as a religious order, putting-out systems or local leaders, to commercialisation and to its own organisation. Thus, the questions of development, structures and organisations are evident here, too.

Concerning the market and market exchange, the research on the Holy Roman Empire provides a large number of studies on different actors on the market, from trading companies to networks, from monasteries to princes, from merchants to peasant participants of the market. Studies on markets as places increasingly combine historiographical and archaeological approaches, which lead to interesting new perspectives. Those who study markets as events often focus on fairs and especially the large international fair of Frankfurt/Main. This research, however, is seldom brought into connection with the more theoretical debates on commercialisation and the emergence of a market economy. These larger discussions focus mostly on England and the Netherlands. For certain commodities, however, for instance, grain, textiles or books, the specific distributional structures, supply and demand forces in the Holy Roman Empire have been analysed.

Since research on urban communities has for a long time been a strong suit of German historiography, urban rules and norms have also been studied extensively. The variety of methodological approaches renders a colourful picture of these urban institutions. We find, for example, the classical assumption that urban institutions—such as brokerage rules—were drawn up to make trade efficient. But if urban institutions were efficient, why did informal markets such as the one in Sluys exist? Transaction costs on the market of Bruges were too high, which drove out smaller traders to Sluys. Methodological approaches such as source interpretation and discourse analysis allow the researcher to question the rhetoric of official documents that claim urban policy was done with the sole aim to foster trade. Towns not only created efficient institutions but also used their powerful position in a network of towns to exclude their neighbours and potential competitors. When studying hunger crises, urban policy appears not as forward-looking and systematically planned, but rather as a short-term reaction to the thread of a catastrophe. In sum, a variety of methodological approaches bring to light a nuanced picture of urban institutions regulating trade: Institutions were shaped by an effort to regulate exchange efficiently but also by power relations and imminent demands of economic actors.

Research on credit and money in the German lands from the fourteenth to the sixteenth centuries follows the leading strands of currency, value and material culture and usage (for money), whereas credit has often been studied regarding certain actors (institutions like cities or hospitals, peasants, Jews and Christians, merchants), certain norms and discourses (e.g. for interest and usury), and the most common types and instruments of credit transactions (different forms of trade credits, small loans for consumption, labour credit), connecting the late medieval system of loans to the spheres of production and market. As with these two fields, credit in the Later Middle Ages is mostly studied in an urban context, where credit institutions are easier to grasp than in the rural areas of the Holy Roman Empire. Here, more studies have to be undertaken to widen the picture. In sum, formalised credit and debt relations have been far more widely studied than informal credits—due to a lack of (edited) sources. Here too, there is plenty of room for more research. Conclusively, medieval people were entangled in various debt relations, using a variety of instruments and techniques not only to overcome moments of crisis but also to actively act on the market as consumers and investors.

We hope to have laid the ground for further studies that bring together the broad range of research, data and sources that are available for the economic history of the Holy Roman Empire with the larger debates on premodern economic history as a whole. Research on the Holy Roman Empire can gain more depth by being included in the broader, more theoretical debates. In turn, the thorough and empirically rich research on the Holy Roman Empire can deepen and give more nuance to the discussions about the structures and transformations of the premodern economy. This book is not in itself a research contribution, but an invitation to join the large research group of economic historians, and a guide how to do that. There are many possible ways of doing economic history. Depending on the sources we analyse and the methods we employ, we learn different parts of the story of premodern economic history. The more sources and methods we use, the more we learn.

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